THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VIII. CHICAGO, MARCH 19, 1887. No. 12.

ORIGINAL ARTICLES.

THE PRACTICE OF MEDICINE AMONG THE GREEKS PRIOR TO THE AGE OF HIPPOCRATES; A CONTRIBUTION TO THE HISTORY OF MEDICINE.

BY J. M. BALL, JR., M.D.,
OF WATERLOO, IOWA.

At a time when Egypt, Chaldea and Phœnicia were enjoying the benefits of an advanced civilization, the early inhabitants of Greece, called Pelasgi, were living on the acorns of the forests, clothing themselves with the skins of wild beasts, and sleeping in caves. The arts and sciences were carried to Greece by the emigration of successive parties from Tyre and Memphis. It is said that Inachus, the victim of a revolution, conducted the first Egyptian colony to Greece, where he founded the city of Argos, 1,856 years before the common era. The indebtedness of Greece to the civilization of Asia and Africa was amply repaid by the Ionian migration.

Of all the Greek peoples the Ionians were the most intellectual, and they were so, not through any inherent faculties in themselves, but simply from the force of circumstances. At a remote period in their history they were forced to leave their homes on the shores of the Corinthian gulf, and to seek a new abode. For a short time they took refuge in Attica, whose territory was found to be too small to support the increase of population. Accordingly, they resolved to seek new settlements in the East, and in their passage across the Ægean Sea they colonized most of that group of islands called Cyclades. On reaching Asia Minor, they took possession of that strip of country lying between the rivers Hermes and Meander, together with the islands Samos, Cos, Lesbos, Chios and others. This migration was of great subsequent importance. While their kinsmen in Attica were struggling for a bare subsistence, and were often hard pressed by the neighboring tribes, the Ionians, having settled in a fertile and luxurious country and among a race wealthier, but far inferior to themselves, soon found those means of ease and leisure which, to a certain extent, seem necessary to the development of intellectual culture.

It is the object of this article to describe the condition of medical practice among the ancient Greeks prior to the age of Hippocrates. The writings of Homer present us with a vivid picture of the state of Europe a thousand years before the birth of Christ. A twilight was dawning on the most eastern verge, in the countries adjoining the Hellespont, but the West and the North were immersed in darkness. "In the intellectual infancy of a savage state, man transfers to nature his conceptions of himself, and, considering everything that he does is determined by his own pleasure, regards all passing events as depending on the arbitrary volition of a superior but invisible power."[1] The white race at that period was like a child. To the Greek, no fiction was too marvellous for belief, if it was separated from his view by a hundred years or a hundred miles; the exaggeration of tradition confirming it in the one instance, and the difficulties of travel in the other. Every hill had its supernatural legend, every forest its phantom, and even the mouth of hell was said to be on the farther side of the Euxine. The medical mythology of the Greeks is remarkably full, and the learned Le Clerc,[2] with commendable zeal, has searched through history, poetry and inscriptions, hoping to find something which would shed light upon the origin of our science. He details the names of more than thirty gods and goddesses, heroes and heroines who possessed a knowledge of medicine.

The first of the Greeks who immortalized himself by his wonderful cures was Melampus, to whom altars were erected by his grateful patients. He is said to have lived 200 years before the Trojan war. His most famous cures were performed upon the daughters of Proteus, King of Argos, who were afflicted with outbreaks of mania, during which they imagined themselves transformed into wild beasts and ran raging through the forests. The cure is said to have been effected by the administration of hellebore.[3]

Medicine was brought to Greece by the sage Chiron. There is much mystery attached to his character and to everything connected with him, but what we may consider as the most probable conclusion is that he was a prince of Thessaly, who lived a short time previous to the siege of Troy, that he was far superior to his contemporaries in knowledge, and that, after the manner of his countrymen, he was so frequently seen on horseback as to give credence to the fabulous story of his being a centaur.[4] He held his school in a grotto in Thessaly and, if the chronicle may be believed, no philosopher of antiquity, no

[1] Jno. W. Draper: History of the Intellectual Development of Europe.
[2] Daniel Le Clerc: Histoire de la Médecine. Amst., 1723.
[3] Kurt Sprengel: Geschichte der Arzneikunde. Halle, 1792.
[4] Bostock: Sketch of the History of Medicine. London, 1835.

professor in modern times, could count in his audience as many celebrities as the centaur saw in his cave. He instructed Jason, Theseus, Castor and Pollux, the subtle Ulysses, the fiery Diomedes, the pious Æneas, and the invincible Achilles: all heroes who distinguished themselves either at the capture of the fleece of gold or in the Trojan war. He taught Apollo music, Æsculapius medicine, and Hercules, astronomy. He cured Phœnix, son of Amyntor, of a blindness supposed to be incurable, and obtained great fame in the treatment of ulcers. He was shot in the knee by a poisoned arrow and prayed Jupiter to take away his life. The god heard his prayer and translated him to the heavens, where he is said to shine in the constellation Sagitarius[5]

It is to Æsculapius, the pupil of Chiron that, by common consent of antiquity, is ascribed the merit of having first devoted himself to the cultivation of medicine and of having made it a distinct object of pursuit. He passed for the son of Apollo by the nymph Coronis, and is said to have been born at Epidaurus, a city of Argolis, where he had a temple and famous oracle.[6] In passing, it may be well to remark that the ancients cherished a great veneration for the medical character. The poetical mythology of Greece shows how great was the respect and gratitude rendered to those who practiced the healing art. This is nowhere better exemplified than in the noble origin which is assigned to it in their fables. No less a personage than the god of light himself, Helios or Apollo, who created and maintains all living nature, is said to have been the father of Æsculapius, the god-like teacher of medicine. The same tradition makes Circe to have been the sister of Æsculapius.

The manner in which Æsculapius was ushered into this world was entirely in harmony with his divine character, and was of itself sufficient to show that he was no ordinary mortal. According to Ovid, he was cut out of the womb of his mother, Coronis, by Apollo after he had destroyed her for infidelity. Apollo received the information respecting the unfaithfulness of Coronis from a raven, and the angry god is said by Apollodorus to have changed the color of the raven from white to black, as a punishment for his unwelcome officiousness. The story of the unnatural manner of birth is thus related by Ovid:

> "Ut tamen ingratos in pectore fudit odores,
> Et dedit amplexus, injustaque justa peregit;
> Non tulit in cineres labi sua Phœbus eosdem
> Semina; *sed natum flammis uteroque parentis*
> *Eripuit*, geminique tulit Chironis in antrum."
> —*Metamor.*, lib. ii, v. 626.

In infancy, Æsculapius was exposed upon a mountain in Thessaly, and was suckled by a goat and defended by a dog. A shepherd having for some time missed his goat and dog, went to the mountain to seek them, and found the child possessed of extraordinary beauty. He raised the boy with the greatest care and gave him into the hands of the sage, Chiron, by whose instructions he profited so well as to far surpass his master in fame.

Marvellous stories are told of Melampus and Chiron. These, however, are insignificant when compared with the feats of Æsculapius. In addition to many other astonishing powers, he was gifted with a remarkable faculty, peculiar to himself, of raising at pleasure the dead to life. Not less than six or seven instances are on record of distinguished corpses that were benefited by the exertion of this happy talent. It is impossible to say how far the bounds of science might have been enlarged by so mighty a genius had not Pluto taken alarm at his progress, and presented a memorial to Jupiter, humbly showing that if a stop were not put to the career of this officious mortal, people would soon cease to die and hell would become a desert; whereupon Jupiter killed Æsculapius with a thunderbolt. It is probably for this reason that the modern children of Æsculapius abstain from working miracles.

We find Æsculapius first mentioned in the Homeric poems as a Thessalian king, not as a god, although divine honors were paid to him in later times. There is no sign in the writings of Homer of the subordination of medicine to religion which is seen in ancient Egypt, nor are the priests charged, as in that country, with medical functions. These are facts which throw grave doubts upon the commonly received opinion that medicine derived its origin in all countries from religious observances. Although medicine among the Homeric Greeks was quite distinct from religion, yet the worship of Æsculapius as the god of healing demands some notice. Sick persons repaired, or were conveyed to the temples of Æsculapius, in order to be cured, just as in modern times relief is sought by a devotional pilgrimage, or from the waters of some sacred spring. Then, as now, the healing influence was sometimes sought by deputy. The sick person or his representative, after prayer, sacrifice and ablution, was made to sleep upon the hide of the sacrificed animal, or at the feet of the statue of the god, while sacred rites were performed. In his sleep the appropriate remedy was indicated by a dream. The record of the case was inscribed on the columns or walls of the temple. Æsculapius obtained in antiquity a veneration which was almost universal, and his worship, which passed from the Greeks to the Romans, extended to all countries subjugated by the two nations. Fifty years after the destruction of the kingdom of Priam, there was erected at Titanus, a city of Peloponnesus, the first temple in his honor. This edifice was reared by the grandson of Æsculapius, Alexanor, the son of Machaon. The worship of this god spread with great rapidity.

The noted asclepia were very numerous, and in the work of Schulz more than sixty of them are described.[7] Among the many temples consecrated to this god, those at Epidaurus, and on the island of Cos, were particularly famous. The island of Cos, for centuries, remained the Mecca of medicine. None but the initiated could enter these holy shrines, and the exclusion of all unholiness extended to all other temples. Only the priests could look upon the columns of Hygeia at Ægeum; no dog was permitted to enter

[5] Anthon: Classical Dictionary.
[6] Renouard: History of Medicine, translated by Comegys.

[7] Schulz: Historia Medicinæ a Rerum Initio ad Annum Urbis Romæ, DXXV. Lipsiæ, 1728.

at Delphos; no child could be born at Epidaurus, and no one was allowed to die within its grounds. In the last temple there was a statue of colossal size, the handiwork of Trasymedus, made of gold and ivory, which represented the god of medicine in the form of an old man seated on a throne, holding a staff in one hand and resting the other upon the head of an enormous serpent. A dog, the emblem of vigilance, lay reposing at his feet. The whole figure bore a striking resemblance to that of Zeus.

The serpent was always the chief symbol of Æsculapius, and all the coins stamped in his honor are thus marked. From time immemorial the snake has been the symbol of craft and prophecy. Moses erected a snake in the desert of Arabia; the natives of Guinea still worship a holy serpent, and the Phœnicians and Egyptians always regarded it as divine. There are many reasons for this reverence: The snake was formidable in appearance on account of its fiery eyes and the activity of its poison; it moved quickly, and in moving described curious, mystic figures upon the ground; it had a long life, with apparent capacity for rejuvenation. Being found in grottoes and holes by the side of springs and healing waters, it came to be regarded as the guardian of these trusts. The Asclepiadæ kept tame snakes which licked the hands of the sick with their tongues or twitched their ears with their mouths. The Epirotes kept snakes in the grove of Apollo, and every year a virgin, naked and alone, entered the grove to feed them. We are told that around Epidaurus there were serpents of a yellowish-brown color, whose bite was not poisonous, and that these were used by the priests in those supernatural performances which filled the people with fear and astonishment.

Although the accounts which have been transmitted to us respecting Æsculapius would lead us to conclude that he was a real personage, who possessed a greater degree of skill than his contemporaries, yet his whole life is so involved in fable and mystery that it is impossible to obtain any correct ideas of the details of his practice. We have no direct evidence to show how far internal remedies were administered, and it may be supposed that the Greeks at this period relied largely upon the use of magical arts and incantations. Although we have reason to believe that certain vegetable products were employed as internal remedies, yet we are scarcely able to ascertain what was the object of the practitioner and what were the plants used. The poet Pindar, who lived 800 years later, was the first to comment upon the practice of this personage, which he described as follows: "Æsculapius cured the ulcers, wounds, fevers and pains of all who applied to him, by enchantments, calming potions, incisions and external applications."[8] It is said that Æsculapius obtained from Minerva the blood which flowed from the veins of Medusa after the latter had been beheaded by Perseus. With that which flowed from the left side he destroyed his enemies; while that obtained from the veins on the right was used for the benefit of his patients.

The practice of medicine remained for a considerable time hereditary in the family of Æsculapius, and his descendants, called Asclepiadæ, were the priests who presided over the temples erected in his honor. The temples were built in salubrious localities, sometimes on the summit of a hill or on the side of a mountain; sometimes on the sea shore, or near a thermal or mineral spring, and in spots where groves of trees could refresh the sight of the sick and afford them cool and solitary retreats.[9] In the selection of the sites for the temples, the priests displayed the shrewdness which has characterized them ever since. Thus we see that they were erected under circumstances not a little resembling those found conducive to health by the invalids of modern times. Some of the practices enjoined by the priests were of a dietetic nature and were directly conducive to temperance and cleanliness. The isolation and seclusion of the temples was well calculated to excite the reverence of superstitious and credulous minds, and this feeling was greatly heightened by the preparation of fasting and prayer which was made a necessary preliminary to entering the gates. The temple at Orophus was open only to him who had first fasted for several days; no wine could be drunk for three days, and no food tasted for twenty-four hours before admission to the temple at Pergamus. In addition to these preparations, offerings were made of a cock or a goat, as in the sacrifices of Socrates; prayer attended the ceremonies, and the service was further sanctified by music. The patient was bathed, subjected to frictions and manipulations, and then anointed with oil. Apollonius anointed himself, before entering the temple, by pouring oil of amber upon his head, so that the body smoked, and physician and patient were enveloped in a halo. After enwreathing themselves, the patients entered the temple amid the singing of hymns and the playing of harps. In the sleep which followed, Æsculapius appeared in a dream and indicated the proper treatment. All antiquity had faith in dreams, and their interpretation was the business of the priests. Sacred and profane history are full of examples which attest the universality of this belief. The Asclepiadæ did not stop with interpreting the dreams of their patients; when occasion required, they even dreamed for them themselves.

In return for their services in behalf of suffering humanity, the Asclepiadæ received no direct emolument, but were paid by presents from the patients. These were often of great value, such as vessels of gold and silver; often casts of the affected member, the so-called anathemas, were made from these precious metals and donated to the priests. At Amphianus it was customary to throw silver coins into the sacred springs. In some places paintings of the diseased parts were suspended from the walls of the temple, or the name of the patient with a description of his disease, the remedies employed and the result attained, were engraved on metal tablets (tabulæ votivæ), doorposts, or columns. Six such columns, with Doric inscriptions, were still standing in the time of Pausanius, in the asclepion of Epidaurus. As soon as an important remedy was discovered, the mode of preparing it was written on the gates and

[8] Pindar: Third Pythian Ode.

[9] Lessing: Handbuch der Geschichte der Medizin, Berlin, 1838.

columns of the temples. Thus, a celebrated anti dote for snake-bites, the contribution of Eudemus, was recorded on the door of the asclepion at Cos, and a noted eye-wash was affixed to a similar place at Ephesus. Those who invented surgical instruments deposited them within the temple. Thus Erasistratus, according to Cœlius Aurelianus, presented one to the temple at Delphos, intended for the extraction of teeth. In this manner the temples gradually became centres for medical instruction.

Gruter[10] has given a copy of several votive tablets which were unearthed on the Isle of the Tiber, on one of which the following was inscribed in Greek: "Lately a certain Caius, who was blind, came to consult the oracle. The god required that he approach the sacred altar to perform adorations; at once he passed from the right to the left, and having rested his fingers on the altar, he raised his hands to his eyes and immediately recovered his sight. The people rejoiced to see such marvels accomplished under the reign of our august Antoninus." It is more than probable that Hippocrates, the central figure of ancient medicine, obtained much of his knowledge from reading the votive tablets and inscriptions found in the temples.

Statues of Æsculapius were to be found in all the temples. The god of healing was always figured in the form of a strong and venerable man with full beard and gray hair, who in earnestness and mildness of expression bore a striking resemblance to Jupiter. Although sometimes seated, yet generally he was seen standing erect or leaning on a staff, around which a snake was seen twining its spiral coils. He was usually covered with a pallium with regularly disposed folds resting upon his right shoulder and exposing the greater part of the chest and abdomen, whose well-formed muscles showed him to be possessed of great strength. Rarely was his head covered, but frequently it was adorned with a laurel wreath or a nimbus. At his feet was a mystical globe. Sometimes he was seen bearing a strobile of pine. The animals most frequently seen with Æsculapius were the cock, which Socrates mentioned in his last hours, the owl, the eagle, the hawk, the ram, or, what to him was most sacred, the serpent. Sometimes he was figured alone, but frequently one of his daughters, usually Hygeia, accompanied him. She is represented as clad in a long folded garment of white, holding in her left hand a serpent, while the right contained a shallow dish or patella, filled with consecrated food to which the snake is directing its attention. Between these two figures often stood another of dwarfish aspect and doubtful origin, the child Telephorus, or the Harpocrates of the Egyptians. His finger pressed to his lips was symbolic of the secrecy which appertains to the mysteries of the art.[11]

The practice of medicine in the temples of Æsculapius may be divided into two epochs. In the first, which extends to the time of Hippocrates, the Asclepiadæ, although for the most part employing superstitious means, rendered a service to science by the custom developed among them of observing the phenomena of disease. In those barbarous times medicine could make more progress in the hands of a secret order like the Asclepiadæ than if it had been a domestic and popular art. It was not to be expected that at this remote period, when all knowledge was in an infant state, a man of genius could be raised up, who would elevate medicine to the rank of a science. In the second epoch, which extends from the time of Hippocrates to the institution of Christianity, the influence of the priests gradually declined, and the practice of medicine in the temples was little better than a gross superstition.[12]

The remembrance of the benefits of Æsculapius was perpetuated by the institutions of feasts which were celebrated with much solemnity at Epidaurus, Ancyra, Pergamus, and Cos, and at which the greater part of the inhabitants of the cities of Asia Minor congregated at certain periods.

The course of instruction among the Asclepiadæ was in conformity to the national habits. Young men, about to commence the study of medicine, were not allowed to enter until after the completion of a preparatory course of three years, from the fourteenth to the seventeenth years, but the sons of physicians began earlier, and with both the medical training continued seven or eight years. The neophyte was conducted into his art with all the secrecy and exclusiveness that had prevailed, from the remotest antiquity, among the handicraft associations and religious orders, and which, at a later period, was to be found in the political clubs and schools of philosophy. Some of these societies were for charitable purposes, some for the promotion of commerce, some for the cultivation of knowledge, while others were for the purpose of controlling the affairs of state. In each of them, the ceremony of initiation, however distinctive it might appear to be, was modeled after that of the Eleusinian mysteries. Of these mysteries there were two grades, the greater and the lesser; and of each division there were several degrees. The celebration of the greater began at Eleusis on the fifteenth day of Böedromion, the third month of the Attic year, and lasted over nine days. The eighth day was called Epidauria, in honor of Æsculapius, who arrived on one occasion from his native city, Epidaurus, too late to attend the grand ceremonial of the sixth day. The Athenians, unwilling to disappoint so distinguished a benefactor of mankind, added a supernumerary day. In these sacred mysteries there were three stages of advancement, or degrees, which answered to the three scholastic degrees conferred by the universities in mediæval times. The candidate for medical honors, having passed a suitable preparation, was obliged to subscribe to an oath which was similar to that in use among the Pythagorians. At the completion of the term of study, the ceremony of coronation took place and corresponded to the modern graduation. It was an evidence of the recipient's fitness for assuming the duties of the profession, and conferred upon him the privileges of fellowship and the right

[10] Gruter: De Lucrementis Artis Medicæ per Expositionem Ægrotorum in Vias Publicas et Templa. Lipsiæ, 1749.

[11] Friedlænder: Vorlesungen über die Geschichte der Heilkunde. Leipzig, 1839.

[12] Gauthier: Recherches Historiques sur l'Exercice de la Médicine dans les Temples. Paris, 1844.

of initiating others. The ceremony of placing a wreath, cap or crown upon the heads of those who were admitted into full fellowship in these ancient schools was continued down to the middle ages, and was the usual form of admission at Salernum, the earliest of the mediæval schools of medicine.[13]

In accordance with the custom of that age, Æsculapius transmitted his profession to his sons, Machaon and Podalirius, who were as skillful in the sciences and in eloquence as in the healing art. Machaon and Podalirius belong equally to history and mythology, and their biographies are a mixture of probable and fabulous narrations. Their existence cannot be doubted, for the Homeric songs and other ancient writings represent them as skillful physicians and valiant captains, who took an active part in the siege of Troy; but the statement of their genealogy does not admit of the same confidence. They are said to have been the sons of Æsculapius, while we know that there are grave doubts as to the existence of this celebrated individual, and besides, the words, "children of Æsculapius," are often used figuratively by ancient writers to designate members of the medical profession.

Machaon, who was regarded as the elder of the two brothers, must have been skillful in dressing wounds, if we may judge of the value which was placed upon his services by the Grecian army from its anxiety to have him properly cared for when he was wounded in the shoulder by a dart. "O, Nestor, pride of Greece (cries Idomeneus), mount, mount upon thy chariot and let Machaon mount with thee! Hasten with him to our ships, for a warrior who knows, as he does, how to relieve pain and cure wounds, is himself worth a thousand other heroes."[14] This renowned hero was killed by Eurypylus in single combat under the walls of Troy.

Podalirius survived his elder brother and assisted in the ruin of the kingdom of Priam, but on the voyage homeward he was shipwrecked and cast upon the coast of Caria, where he was rescued by a shepherd. Learning that he was a physician, the shepherd conducted him to the king, Damætus, whose daughter had fallen from the top of a house and was insensible. This skillful surgeon bled her and saved her life, this being the first recorded example of blood-letting.[15]

The sons of Æsculapius were both surgeons, as witness the lines of Homer:

> "Of two famed surgeons Podalirius stands
> This hour surrounded by the Trojan bands;
> And great Machaon, wounded in his tent,
> Now wants the succor which so oft he lent."
> —*Iliad*, lib. xi.

The other members of the family of Æsculapius are all fictitious beings whose symbolical names remind us of some attribute in medicine. Thus the name of Epion, his wife, means to quiet; those of Hygeia and Panacea, his daughters, express respectively health and a remedy for all diseases. Many of the gods and goddesses of Olympus fulfilled medical functions. Apollo, or Phœbus, the father of Æsculapius, assumed the privilege of preventing or causing epidemics, and Juno was said to preside at accouchments, at which times she was called Lucina, Ilithyia, or Natalis.

It is in the immortal poems of the Iliad and the Odyssey that we find the only certain traditions respecting the state of medical practice in Greece prior to the time of the Peloponnesian war. From these writings it appears that the profession of medicine and surgery constituted a kind of sacred occupation, the practice of it belonging only to privileged persons, and that in the armies, the highest princes gloried in dressing the wounds of those who had fought the battles of their country. From these poems we learn that the duties of those who devoted themselves to the divine art were mainly confined to the dressing of wounds, and that the imaginary power of enchantment was joined with the use of topical applications. The priests of India, the physicians of China and Japan, and the jugglers of the savage or half-civilized tribes of the old and new worlds, constantly associate, with drugs and manual operations certain mysterious rites and practices, upon which they especially rely for the cure of their patients. Such doubtless was the character of medical practice among the Greeks in the remote times.

The heroes engaged in the Trojan war evidently understood the means of arresting hæmorrhage. Homer, in describing the treatment of the wound of Eurypylus by Patroclus, says:

> "Patroclus cut the forky steel away;
> Then in his hands a bitter root he bruised;
> The wound he wash'd, the styptic juice infused.
> The closing flesh that instant ceased to glow,
> The wound to torture, and the blood to flow."
> *Iliad*, lib. xi.

Eurypylus, when asking the professional services of his friend, thus addresses him:

> "But thou, Patroclus, act a friendly part,
> Lead to my ships, and draw this deadly dart;
> With lukewarm water wash the gore away;
> With healing balms the raging smart allay;
> Such as sage Chiron, sire of pharmacy,
> Once taught Achilles, and Achilles thee."
> *Iliad*, lib. xi.

It is to be regretted that we have so little information regarding the political condition of the physicians of Greece. All that we know has been gathered from a few obscure passages in various writers. In a State so polished as Athens, the physicians would necessarily be subjected to certain laws. Plato seems to insinuate that at his time the physicians of Greece, as formerly those of Egypt, directed the treatment of diseases according to certain formulæ and precepts marked out for them, and that they were responsible to the state for all deaths caused by their negligence. A passage in Xenophon also proves that the young men, before establishing themselves on the territory of the republic of Athens, were obliged to ask permission, in a public discourse, in which they explained their previous education and practice.

Anatomy could not be studied by the Greeks be-

[13] Watson: The Medical Profession in Ancient Times. New York, 1856.
[14] Iliad, lib. xi.
[15] Sprengel: Erster Theil, p. 106.

cause they condemned, and regarded as a crime worthy of great punishment, all conduct towards the dead which was contrary to public prejudices. These prejudices had their origin in the belief that the soul, when freed from its earthly covering, was forced to wander on the banks of the Styx until the body was buried or cremated. Hence the celerity with which sepulture was performed on the dead to insure the rest of their souls, the duty imposed on all travelers of covering the dead bodies met with, the religious respect in which the burial spots were held, and the severe punishments inflicted on all who dared to profane them.[16] The extreme veneration in which the dead were held may well be illustrated by the following incident: In the twenty-sixth year of the Peloponnesian war (406 B. C.), Callicratidas, who succeeded Lysander as the admiral of the Lacedæmonian fleet, was defeated by the Athenians in a sea fight off the Arginusæ islands. At least a dozen Athenian vessels were left floating about in a disabled condition after the battle; but owing to a violent storm that ensued, no attempt was made to rescue the survivors, or to collect the bodies of the dead for burial. Eight of the ten generals were summoned home to answer for their conduct; six of them obeyed and were denounced by the Assembly, sentenced and compelled to drink the fatal hemlock. Socrates alone defended them, but his eloquence was in vain when pitted against the deep-rooted prejudices of the people.[17] Even during the Trojan war it was customary to declare a truce to allow the dead to be burned:

> "Next, O, ye chiefs! we ask a truce to burn
> Our slaughtered heroes, and their bones inurn;
> That done, once more the fate of war be tried,
> And whose the conquest, mighty Jove decide."

Scanty and imperfect as is our knowledge of the state of medicine in the age of Æsculapius, after his death and that of his sons, we have a long period extending over several centuries, during which we have still less information respecting the history and progress of the art. We have not a single improvement of any kind recorded as having taken place during this interval, nor have we the names of any individuals handed down to us who were of sufficient eminence to be distinguished above their contemporaries. We learn that the practice of medicine was entirely in the hands of the Asclepiadæ, and that the temples were gradually converted into schools of medicine, among the most celebrated of which were those at Cos, Cnidus and Rhodes.

The priests connected with the two rival establishments at Cos and Cnidus devoted their attention, from the outset, to different objects; those of the former asclepion assumed more of a philosophical caste, attempting to unite reasoning with experience, while the latter devoted themselves solely to the observation and collection of mere matters of fact. Hence it would appear that thus early in the history of our art a foundation was laid for the two great sects, the Dogmatists and Empirics, which long divided the medical world. The priests in the temple of Cnidus professed to depend on experience alone in the treatment of disease. They argued that if reason taught differently from experience, it was injurious, but if it taught the same it was unnecessary. Thus the very source of medical teaching was contaminated with the germs of sects and systems.

Several centuries elapsed during which the Asclepiadæ religiously adhered to the traditions of the Egyptian school, which allowed them to transmit their doctrines only to the members of their caste and to such strangers as fulfilled satisfactorily the initiatory tests. Under the control of the priesthood, medicine had remained stationary when, at last, it began to be cultivated by a class of persons much more likely to produce improvement, and from whom, in truth, it received its first impulse. Previous to the time of the philosophers, medicine had been exercised for the most part for the purpose either of direct emolument, or for the still more selfish purpose of maintaining the influence of the priests over the minds of the people. And, indeed, it was time that things were changed. The era of brute force, of hand to hand conflicts with monsters and brigands, had passed away, and the reign of intelligence, of strategy in war and politics, had become conspicuous. The mythological heroes whose labors were so much boasted such as a Perseus and a Bellerophon, were succeeded by those great men whose names have been justly celebrated in history, as Leonidas, Miltiades, and Themistocles. Long before the Asclepiadæ revealed their knowledge of medicine, and previous to the dispersion of the philosophers, the art of healing was extensively practiced in the gymnasia. Of the physicians connected with these establishments, there were three orders: the gymnasiarchs, who regulated the diet of the athletes; the gymnasts, to whom was intrusted the medical treatment of the sick; and the jalaptres, whose duties were mainly surgical.

The revolt of the Pythagorians at Crotona was an event of great importance in the history of medicine, for it was followed by the disruption of the sect and indirectly contributed to the advancement of our science. When the storm of persecution had driven the philosophers into different parts of Greece, many of the members being no longer under an obligation of secrecy, revealed the workings of the order, taught publicly the art of healing, and thus originated the general practice of medicine. About 440 B. C. Metrodorus, a former member of the Pythagoreans, exposed their secrets, and set himself up as a teacher of medicine. About the same time the practice originated among physicians of migrating from place to place and of making a public declaration of their skill. The same custom prevails to-day among us, who are supposed to far exceed the ancient Greeks in wisdom and judgment. The people of antiquity called these itinerant physicians periodevtæ, while the moderns name them charlatans.

When the disciples of Pythagoras had revealed the secret of their mysteries, and the philosophers had dared to teach and discuss publicly the principles of morals, physics and theology; when the itin-

[16] Sprengel: Geschichte der Arzneikunde, Erster Theil, p. 141, Halle, 1792.
[17] Wm. Smith: History of Greece, p. 366.

erant physicians and professors of the gymnasia had acquired the confidence of the public, the priests of Æsculapius could no longer keep silence, under the penalty of seeing the sceptre of medicine, which they had held till then, depart from their hands. They were forced to bring to the light of discussion the principles and rules of their medical practice. It was in this manner that our science came forth at last from the shadow of the sanctuary.

The priests who served in the temple of Cnidus were the first to follow the impulse of the age, and they issued a small repertory of medical facts called the "Cnidian Sentences." These are said to have been written by Euryphon,[10] a contemporary of Hippocrates. The Asclepiadæ of Cos were not slow to follow their example, and they published a series of treatises which, at a later date, were collected under the name of the "Hippocratic Works." This production, which overshadowed all other medical publications at that period, constitutes one of the most precious monuments of ancient medicine.

Thus it was that the spirit of medical inquiry outgrew the confines the temples which, long after medical instruction had ceased to be given in them, remained the strongholds of religion and still maintained their ancient mysterious ceremonies. The asclepion of Cnidus is known to have been in existence down to the time of Constantine, by whose command, in common with other relics of paganism, it was razed to the ground. The Asclepiadæ of Cos gradually lost their influence over the multitude; their sacred groves and fountains were forsaken; and, at length, during the lifetime of Mark Antony, the Roman prefect, Turullius, regardless of the divinity which had once ruled within the precincts of its hallowed shade, cut down the groves and of the timber made his ships. Such was the fate of those noted temples of medicine. Although long since destroyed, they have left an influence upon our art which will last as long as time itself. It was from this family of priest-physicians, the Asclepiadæ, that Hippocrates, the Father of Medicine, was descended.

THE THERAPEUTIC VALUE OF OXYGEN.

With Reports of Cases Treated.

BY SAMUEL S. WALLIAN, A.M., M.D.,

OF NEW YORK.

Regarding the availability and applicability of factitious oxygen as a therapeutic agent, there has prevailed, and still prevails, a very general professional misconception. This stereotyped estimate is based on the reports of early investigators, particularly those of Lavoisier, who asserted that his birds, dogs, rabbits and guinea-pigs, when immersed for a short time in an apartment or receiver filled with crude oxygen gas (derived from and doubtless tainted by the bungling decomposition of an oxide of mercury,) became excited and preternaturally lively, which condition was followed by more or less physiological depression. Considering the crude state of chemical science at the time, and the questionable processes employed, it is easy to understand that these results were not necessarily attributable to the newly discovered gas, the nature of which was being eagerly and none too honestly investigated. These hasty and superficial impressions seem to have been accepted without question and without satisfactory verification; and, what is more surprising, they have ever since remained as accepted dogmas in the world of physiological chemistry. In the century that has since elapsed chemistry and physiology have both been revolutionized; but with all the progress made in this direction few text-book authorities have thought it worth while to investigate from a fresh standpoint, or to disturb the fossiliferous strata of scientific thought handed down from the latter end of the eigteenth century.

The later French and German authorities have not added much to our knowledge of the agent, their experiments partaking more of the brilliantly curious than of the practical form. Some of them have shown, at least to their own satisfaction, that there is a saturation point of the blood beyond which it refuses to absorb any more oxygen; overlooking the imminent and practical fact that the average human being, living under ordinary civilized circumstances, seldom approximates the saturation point; and that ordinary mortals are in about as much danger of being translated as of damaging themselves by an excess of the vital element in question. To this dead level of authorities there are a few notable exceptions. Phillips cautiously, but convincingly, combats the prevailing misconceptions, and our own Dalton refutes many of the absurd conclusions which had so long prevailed. It is now known that the decarbonization of the blood is not the principal office of the oxygen derived from atmospheric inspiration. The experiments of Magnus show that from ten to twenty-five per cent. of the oxygen inspired by a human adult is absorbed directly and in a free state, into the blood. The affinity of blood, arterial as well as venous, for oxygen is shown to be very great. Compared with that of water the ratio is as 2½ to 1. This is doubtless the key note to the action of oxygen, therapeutically exhibited.

Dalton has shown that the carbon dioxide constantly exhaled by all animal bodies is not all formed by contact of the circulating fluid with the oxygen of the air. *It already exists in venous blood before it reaches the lungs.* Hence, it is constantly being formed in the tissues themselves, as well as in arterial blood; since the same authority shows that both carbon dioxide and free oxygen exist in arterial blood. According to Magnus there is a nearly constant relation between them, the mean proportion being, by volume, as 10 to 25 in arterial, and as 10 to 40 in venous blood. If these premises be accepted, and no one has as yet disputed them, carbon dioxide is not, as generally taught, wholly the product of respiration. No doubt a small portion of that expired is formed at the moment of contact of atmospheric oxygen with the carbon-loaded blood as it reaches the air-cell, but more of it already exists in the circulating fluid. The venous system is thus seen to be a col-

[10] Schulz: Historia Medicinæ, p. 148.

lector of waste products—the complete sewerage of the vital economy. In the pulmonary circulation oxygen is freely and promptly absorbed, and carbon dioxide given off, while in the systemic circulation oxygen disappears and is constantly being utilized in the various processes of reconstruction.

It is evident that the ancient assumption respecting vital combustion is very imperfect as an explanation of the office of oxygen. In fact, modern physiologists have proved that the whole theory of heat production in the animal system, considered as a direct result of combustion, is lame and unsatisfactory. It is a well-known law of physics as well as the result of common observation that slow oxidation is not the source of any considerable degree of heat, and vital caloric has another explanation than that of the combustion of carbonized material within the system.

What becomes of the 10 to 25 per cent. of oxygen so constantly absorbed by the blood? Is its office to supervise the general processes of metamorphosis, without which the animal cannot exist? Does it preside alike over digestion and assimilation, and does the absence of it render possible all the various forms of mal-assimilation, including those which result in glycosuria, lithæmia and the various diathesis—even the tubercular? Does it incidentally, here as elsewhere in nature, intercept toxic tendencies, destroy septic and putrefactive germs, prevent degenerative changes and retard or render inert the slowly forming elements of malignant growth? Is it used in the end as an essential *materia elimentaria*? These are questions which have been asked, which are, in fact, constantly being insinuated by science, but have been as yet only empirically rather than satisfactorily or scientifically answered.

A large class of physicians at the present time flippantly dispose of the question of the therapeutic value of oxygen by citing the current saw about the saturation of the blood. They repeat that scientific stupidity which assumes that the free oxygen in the blood cannot be increased beyond the limited quantity which it constantly and readily receives from the ordinary atmosphere; and hence, that any attempt in this direction is not only uncalled for but practically futile. Granting that this assumption is true, the objection practically falls flat. If the human race could be turned adrift, in a body, and should lapse into the primitive life of nomads, it might be feasible for each individual to realize his due quota of the vitalizing element. Unfortunately civilization implies a sort of human hibernation, and the average modern individual is compelled to eke out his disease-pestered days on one-half this allowance, or even less. The result is inevitable. Functions are imperfectly and incompletely performed; changes and metamorphic processes, though initiated, necessarily flag and result in half-formed tissue, or in products inimical to the healthy organism. Toxic, carbonaceous elements accumulate, degenerative processes are set up, and chronic disease is the inevitable result, if even malignant demonstrations do not end the disastrous history.

These are homely facts, and they have no glamour of superficial laboratory erudition or bacillus-staining to give them mock-dignity. Nevertheless, they appeal to the hard common sense of every practitioner of medicine who realizes how helpless he is to relieve the many and multiplying forms of disease, constantly being analyzed by the aid of the scalpel and the microscope, with a minuteness of detail which is fairly bewildering, and which are the direct or remote results of this universal oxygen famine.

Inspired oxygen passes in a free state into the arterial blood and is distributed throughout the entire system, thus coming into intimate contact with every remotest tissue and cell. Keeping in view this fully admitted fact, how can its ultimate influence on the vital economy be estimated? It would be a waste of time to prove that the blood can and does, under certain circumstances, absorb an unwonted increment of oxygen, since as already asserted, a large majority of the race live under conditions which positively prohibit the utilization of anything like a normal supply. That medical mountebanks have made capital out of the word oxygen is no concern of ours. They did the same for electricity, for hydrotherapy, movement cure, and massage; which, once extolled as panaceas, are now universally recognized as valuable and sometimes indispensable allies. But in spite of drawbacks in the shape of prejudice, time, care in manipulation, and expense, the medical use of oxygen and its principal ally *nitrogen monoxide*, is steadily on the increase. A large number of reputable practitioners in this country are quietly experimenting with these agents, and carefully noting results. Abroad there is even more interest shown. The subject is yet without a literature, but materials and data for this was steadily accumulating. Lately, Dr. Powell, of this city, read a suggestive paper before the New York Academy of Medicine on the use of ozone in phthisis. The February number of the *South-Western Medical Gazette* has a short paper on the subject, by Professor F. C. Wilson. The *London Lancet*, of recent date, contains a short, but pertinent paper on the remedial value of oxygen. Thus, a slow but steady progress in this direction is being made.

It is evident to the most casual observer that the medical science of the future must be largely based on a study of natural therapeutics. The artificial and far-fetched are daily losing caste. The profession long since lost faith in dispensatory routine, and the lay public is gradually becoming infected with the same skepticism. The heyday of pharmacomania has passed and the inevitable reaction has already set in. The routinists no longer take front rank. They must henceforth become the rear-guard and camp-followers of the army of progress. Without realizing it the profession is quite generally commending oxygen. Every patient sent on a sea-voyage or to the mountains, is a walking certificate as to its efficacy. Every argument in favor of open air life, roughing it on the plains, a sojourn in Southern California, Italy—in short all travel, is a plea for oxygen. Many of the newer antiseptics and parasiticides have been found to depend on free oxygen liberated during decomposition within the system, or

in contact with the tissues The terebene group may be cited as an example. Theories, however, are not so important as clinical facts. A few brief sketches of further cases treated are appended:

Case 21.—Mrs. S., age 32, suffering from chronic gastric catarrh of unusually severe type. After six weeks daily use of oxygen (modified and diluted,) together with hot water drinking—very little attention being paid to her diet—she fully recovered, and became more robust than for many years.

Case 22.—Mrs. C. R., age 63. Suffered some years since with spinal meningitis and has never fully recovered. Convalescence was followed by epileptoid convulsions and hysterical phenomena of various kinds. At present is subject to paroxysms of dyspnœa, simulating œdema of the lungs. Each paroxysm it is thought will prove fatal. Modified oxygen was carried to the bedside in rubber bags, twice daily, and during the intervals the patient was kept supplied with a solution of hydrogen dioxide which was vaporized and inhaled.

This treatment was continued for three weeks, with the gratifying result of clearing up the lungs, removing the dyspnœa, and greatly aiding the digestion, which had become seriously disordered. Nor was there any relapse on leaving off the remedy. This patient died six months later from degeneration of the cord, (at least so reported by the attending physician) the dyspnœa not having returned.

Case 23.—P. E., age 22. Subject to periodic headache of so severe a type as to have injured his memory and caused ocular troubles. The paroxysms are generally a true migraine and of fairly explosive violence. They recur from once to three times per week quite regularly. Placed this patient on a mixture of O, N_2O and common air, viz.:

℞. O, two volumes.
N_2O one volume.
Common air three volumes.

Of which two to four gallons were inhaled night and morning.

Two weeks treatment greatly relieved the paroxysms, and in four weeks patient assures me he is no longer troubled. The head is cool, the eyes clear, and the paroxysms do not now recur.

Case 24.—Miss W. M., age 24, teacher. Has severe and constant cough, with "soreness" of the lungs, loss of appetite and general malaise. Is very much frightened lest it be already incurably seated "consumption." The family history is not favorable.

October 20.—Not being able to come to the office for treatment, is placed upon the daily use of the portable variety. Continuing the inhalations carefully night and morning for four weeks, she reports that her cough is gone and appetite excellent. The soreness no longer troubles her, and she has given up "dying of consumption" for the present.

Case 25.—Mrs W. A., age 62. Has been for years subject to constant neuralgia—trifacial—of the most aggravated form, accompanied by severe chronic dyspepsia. Stomach tolerates very little food of any kind, and her sufferings are agonized in the extreme. It is hardly thought that treatment will do much for her, especially since her circumstances do not permit the most efficient form of office treatment. Contrary to expectation, the thorough use of the portable form of oxygen four times a day is followed by marked and immediate relief of the paroxysms. The digestive system also promptly responds, and within a week or ten days she is enabled to partake of nourishing diet, and to digest it. In connection with the inhalations this patient is directed to take internally, of the 15 volume solution of hydrogen dioxide, a teaspoonful, well diluted, before each meal.

This treatment is still being followed and improvement is steady in all directions.

491 West Twenty-Second Street.

A REMARKABLE RESULT FROM AN OPERATION FOR STRANGULATED HERNIA.

Read before the Wayne County (Indiana) Medical Society.

BY S. S. BOYD, M.D.,

OF DUBLIN, IND.

On May 17, 1886, I was called to see John Leeson, aged 52 years, who was suffering from direct strangulated inguinal hernia of the right side. The tumor below the ring was about five inches long and two inches thick. The symptoms which ordinarily accompany strangulated hernia, such as intense pain, sickness and vomiting, being absent, and as I had, two months before, reduced a similar strangulation in the same patient, of four days' standing, by taxis after anæsthetizing with ether, I thought it safe in this case to make an effort at reduction by the same means. Being assisted by Dr. H. B. Boyd, we had the patient placed on a broad board, which was inclined at an angle of about thirty degrees from the horizontal, with his head downwards, his head and shoulders being supported by pillows, I resorted to the usual manipulations. After pursuing this course three and a half hours we abandoned the effort in that direction.

Dr. C. N. Blount was then called in consultation, when we concluded, as the symptoms were still not urgent, to try the topical application of ice. During the next eight hours blocks of ice of about a lb. weight were continuously applied over the tumor, and warm water enemata frequently injected into the bowels during the same period. That night a slight nausea was developed, though there was little pain or other unfavorable symptoms. The pulse, which had not been over 80 per minute, was not increased, and the temperature did not rise above 100°.

On the morning of May 20, the fifth day after the strangulation occurred, believing that without the use of the knife the obstruction would not be removed, we determined on an operation. When the sac was opened it was found to contain omentum only. The distal end of the contained omentum was dark, but not gangrenous. But, in accordance with later teaching on that subject, and from the fact, as we believed, that omentum which has been strangulated over four days will not likely have its circulation restored if returned to the abdomen, we decided to ligate and excise it. We therefore ligated the protruding omentum

in four parts, as near the point of stricture as possible, then incised the omentum as near the ligatures as practicable, and after enlarging the stricture, we returned the stump into the abdomen. After placing three deep sutures in the wound, the usual dressing completed the operation. The removed omentum weighed nine ounces. It was about four inches long and one and one-half inches thick, and nearly round, being a little larger at the proximal end.

On the 21st the patient was resting well; pulse 100, temperature 100°. On the 22d the pulse was 110, temperature 100. Pulse and temperature declined from last date until the 27th, when warm water enemata were freely used. On the 28th, after having removed, mechanically, a large amount of impacted fæces from the rectum, the bowels were freely evacuated. On the 29th the temperature rose to 102°; pulse to 100, but both fell back to nearly normal during the next three days.

Up to this time the patient had been nourished entirely on milk diet. After this a little bread was added to his three meals per day.

On June 6, seventeen days after the operation, the patient passed per anum one of the ligatures used in ligating the protruding omentum above mentioned, and at the same time there was found in the stool of the patient a piece of what was supposed to be a part of the omentum devoid of its fatty substance. The pulse and the temperature again rose to 100, but fell back to normal the next day. Three days later another one of the four ligatures used in the operation was found in one of the patient's stools.

At no time during the treatment of the case did the patient suffer much pain; and there was but little swelling of abdomen. Opium was freely used from the time of the operation until the patient was considered out of danger. It is now nearly nine months since the operation, and the patient is well and pursuing his occupation as a farmer.

UNUSUAL CARDIAC ANOMALY.

BY A. M. HAYDEN, M.D.,

OF EVANSVILLE, IND.

I wish briefly to record a case of cardiac anomaly which is altogether different from any case that I have ever seen, and so far as I can find there is no similar case on record. The case is as follows:

I was called to see the child when one week old. I found it fairly well developed, weighing eight or nine pounds, with more or less incomplete, though marked, cyanosis. Breathing was labored, and there was a slight cough. I made a diagnosis of non-closure of the foramen ovale, and gave an unfavorable prognosis.

I was superseded by a physician of considerable reputation, who pronounced my diagnosis incorrect.

Thirteen months later I was again called to see the child. I found that it had grown but very little, and was much emaciated, not weighing more than ten or twelve pounds. It was suffering with a well-marked case of chronic bronchitis, mucous râles being distinctly heard on both lungs. I now concluded that I was mistaken in my former diagnosis, as the child was not cyanosed, the skin having regained its normal color. I treated the case for bronchitis.

Heard nothing more from case until a few days ago, when I was called on to make a post mortem examination, the child having died from the effect of disease at the end of the sixteenth month.

Autopsy revealed chronic bronchitis, with hepatization of lower lobes of both lungs. Heart enlarged. Hypertrophy of walls of ventricles. Foramen ovale pervious. Right auriculo-ventricular foramen normal. Left auriculo-ventricular foramen normal. Foramen one-half inch in diameter connecting right and left ventricles. Auricles slightly dilated. *The pulmonary artery took its origin from both right and left ventricles*, the cavity of the artery dividing in the wall of the heart into two equal parts, one terminating in each ventricle. The aorta took its origin from left ventricle, and seemed to be normal. The pulmonary veins emptied into left auricle.

I report the above case with the hope of eliciting comment, both as to the probable cause of the condition, and as to the manner in which the circulation was carried on so as to sustain the life of the child for sixteen months. I would also like to hear of any similar cases, if there be any on record.

Evansville, Ind., December 17, 1886.

MEDICAL PROGRESS.

TREATMENT OF HERNIA BY SUBCUTANEOUS INJECTION.—At the meeting of the New York County Medical Society on December 27, DR. W. B. DE GARMO gave a brief history of the treatment of hernia by methods purporting to be subcutaneous, the object of all of which had been, up to the time of the publications of Heaton's method, to cause obliteration of the hernial sac. Heaton had been practicing his method, and obtaining many cures, since 1843, but he refused to make it known until 1877. Heaton made no attempt to destroy the hernial sac; the whole object of his operation was to so fortify the fibrous tissue surrounding the canal that protrusion would not occur. His method stood alone; it differed in every way from previous methods of subcutaneous treatment; the fluid injected was astringent and mildly irritant, and its action was brought to bear upon the muscular and tendinous structures of which the inguinal canal was composed, and upon the connective tissue which bound these layers together. That improvement and practically cures would result from injections of this oak-bark solution the reader had had abundant evidence, and he could also state that it was practically without danger, at least when correctly employed. Several years ago he stood almost alone in indorsing the method, but since then it had been adopted by many others. That frequent failures had occurred was beyond question. To throw light upon the cause of some of the failures was a principal object of the paper.

In the first place, too much had been expected of the operation, and this was in great part due to the manner in which Heaton placed it before the profession. It was quite natural that he, after so large an experience, should have met with greater success than the general operator. Then the method had been put to unfair tests. For instance, he had known patients to be allowed to go about immediately after rising from the bed, seven or ten days after the operation, without any support. They had even been instructed to cough or strain in order to test whether or not the hernia would recur. A second error was the anticipation of a cure in old herniæ by a single injection. In these herniæ the sac was largely dilated and the canal shortened, and there was a funnel-shaped opening at the internal ring —conditions most favorable for the protrusion of the hernia—and it was very necessary to continue wearing a support. It was cases of oblique inguinal hernia of recent date, in which but few pathological changes had taken place, that were most readily cured by this method. That many errors had been committed in the performance of the operation he had abundant evidence. One error in operating consisted in puncturing the scrotal tissue invaginated by the finger, instead of inserting the needle directly into the canal. In order to enter the canal without injuring the cord he deflected this for convenience to the outer side, instead of to the inner, as advised by Heaton. Immediately and for some moments after withdrawing the needle he made firm pressure over the point of entrance to prevent the return of the fluid in the track of the needle. Some English surgeons laid the sac open and smeared it with the fluid, but there was nothing to be gained by this method, while it added danger. The reader had never observed abscess develop from subcutaneous injection. He employed a particular syringe to make the injections. The subsequent management of the case was as important as the manner in which the operation was done. The strengthening of the walls of the canal was a slow process, and not to wear a support, at least for some time after the operation, was only to invite a return of the hernia. On the other hand, too firm pressure was to be avoided as tending to weaken the tissues which it was desired to strengthen. The patient should be confined a week or ten days, and longer in extreme cases, He had usually employed during this time the bandage devised by Heaton. Last March he had called attention to a modification of Heaton's method which he believed to be important. It consisted in making repeated injections of a small quantity of the fluid when the patient had to continue at his business, and causing him to wear a truss in the meantime. His conclusions from seven years' experience with Heaton's method, during which time he had employed it in over a hundred cases, were: 1. That it was free from danger. 2. That over 45 per cent. of all cases could be cured by it, and in select cases 50 to 75 per cent. 3. That many extreme cases uncontrollable by means of a truss could be brought under control by the operation. 4. That it was followed by improvement in almost every instance. 5. That children not cured by mechanical means could in almost every instance be cured by Heaton's operation.

Dr. R. F. Weir said that the last time he looked over his records he had performed Heaton's operation seventy or eighty times, and the proportion of cures was between one third and one-half—nearer one-third than one-half. At first he had made some of the errors in operating mentioned by Dr. De Garmo; in one instance he had inserted the needle so far as to inject some of the fluid into the abdominal cavity and set up inflammation. The patient died some months later from another cause, and at the autopsy there was evidence of his having injected the fluid into the omentum. He employed Heaton's bandage sometimes, but he preferred superimposed strips of adhesive plaster. Where the hernia was large, he thought the open method was the better. In general, his experience confirmed the views of the author.—*New York Medical Journal*, Feb. 19, 1887.

Artificial Abortion by Evidement.—In the *St. Petersburg Med. Wochenschrift*, No. 45, 1886, Wrede-mann, of St. Petersburg, calls attention to a plan for rapidly emptying the pregnant womb, that in the two cases in which he has used it has proved eminently safe, prompt and in every way satisfactory. A case of incessant vomiting of pregnancy, in which he had had great trouble in inducing abortion once before, caused him to study anew the various means for producing abortion and to try to find a safer and prompter method than the ones usually employed. The case was as follows: A woman, æt. 26, applied to his clinic in December, 1885, for relief from incessant vomiting. She had given birth to five children, without any complications except some moderate vomiting during her pregnancies. One year before, being again pregnant, vomiting became incessant and refused to yield to treatment. At that time Wiedemann had induced abortion. He had dilated the cervical canal with sponge tents, introduced the sound, perforated the membranes, and made hot vaginal douches every four hours. Although these procedures had been repeated daily for six days, they merely brought on pains lasting for several hours. On the sixth day he had chloroformed the patient and had scooped out the contents of the womb with the Simons' curette, though not completely, for after twelve hours hæmorrhage with pains set in and some shreds of placenta came away. Although he had been careful to work antiseptically, an endo-paremetritis gave rise to fever for a week. She is now again two months gone in pregnancy, and the vomiting again refuses to yield to treatment, even the much-lauded cocaine fails of action. She is rapidly sinking, her pulse is 120–150, and the temperature is subnormal. The patient's condition being so low, his previous experience having shown that her womb reacts so badly, and the chance for infection being so great, made him adopt a method by which he could empty the uterus of its contents more promptly.

Thinking that the condition of the womb during the early months of pregnancy must be similar to that of placental polipi, which we are in the habit of

treating by forcible dilatation and curettement, he concluded to empty the womb in this manner. Accordingly, on December 23, 1885, the patient was chloroformed, the parts disinfected with corrosive sublimate solution, and the womb drawn down with vulcellum forceps. The cervical canal being dilated to admit the index finger by means of Fritsch's dilators, the fœtus and its adnexa were removed with Martin's spoon, and under continued irrigation with thymol solution all parts of the placenta and the decidua were completely taken away. Hæmorrhage was very slight and ceased with the completion of the operation. Time from beginning of the dilatation to complete removal of the ovum and its membranes, twenty minutes. It was not possible at this stage of pregnancy to remove the ovum in toto, for on account of the length of the cervical canal his finger could not be carried up to the fundus uteri. The lying-in was normal in all respects. No fever, the pulse rapidly became lower, the vomiting stopped at once, subinvolution progressed normally, the lochia were serous by the second day and ceased by the ninth day, when the patient was dismissed with much improved strength. As a matter of interest, he would add that four months afterwards he was asked by the woman to again perform abortion on her, but refused her, as he could find no indications for the operation.

On May 6, 1886, abortion was performed at his clinic by the same method on a married woman, æt. 23, pregnant twelve to fourteen weeks, who had a contracted pelvis with a conjugata of 6.0 cm., and who refused to have abdominal section performed at term. The operation was as successful as the first, duration twenty minutes, very slight hæmorrhage, lying-in normal.

Wiedemann thinks that the method recommended by him, forced dilatation in narcosis and evidement of the ovum, has not heretofore been used for the purpose of interrupting pregnancy, and hopes by this report to induce his colleagues to give it a trial, for he believes that this operation, so frequently employed for other purposes, should be especially adapted to produce artificial abortion, as it is simple, rapid and safe, and enables us to avoid many of the dangers of abortion.

INFANT FEEDING.—SOXHLET starts from the premises that milk in the glands is free from germs, as shown by Eister and Escherich, and that the germs that give rise to fermentation enter the milk after it has been taken from the glands. He finds the reason for the fact that infants thrive on mother's milk, and are so apt to suffer from digestive troubles and to lose ground when fed on cow's milk, not in the slight difference in the chemical constituents of the two milks, but in the manner in which they get to the child, the former direct from the breast, the latter only after it has had all opportunities to become contaminated with impurities and fermentative producing causes. To avoid this danger when it becomes necessary to feed an infant on cow's milk, he advises that it should be *sterilized* as soon after milking as possible. To accomplish this the milk should be put into bottles, closed with rubber stopper through which a hole is pierced, the bottles placed in a vessel with water, and heat applied. As soon as the milk in the bottles has expanded to its highest degree, a well fitting glass plug is inserted into the hole in the cork, and the water is then made to boil for thirty-five to forty minutes. This may be repeated two or three days, and *such milk may be kept in a cool place for three or four weeks without turning acid.* Before using the milk the bottle is placed in a vessel with water and heated to 97½–98½° F., the stopper is removed and a clean nursing apparatus is attached to the bottle. Milk left over and milk in open bottles must not be fed. The bottles and nursing apparatus must always be kept scrupulously clean. Soxhlet affirms that he has evidence to prove that milk preserved in this manner does not exert the least injurious influence on the infant's digestive tract, and that thus one of the main obstacles to infant feeding is obviated.—*Memorabilien*, Hft. 4, 1886.

INOCULATION OF TUBERCULOSIS IN A CHILD.—The custom of the Jews of sucking the wound after circumcision, the sucking being done by the operator, by a relative, or by an acquaintance, has frequently given rise to syphilitic infection of the child, and many such cases are on record. On the inoculation of tuberculosis in this manner we have only the communication of Lindmann (*Deutsche Med. Wochenschr.*, 1883, No. 30, ten cases), and that of E. Lesmann (*Deutsche Med. Wochenschr.*, 1886, No. 9, et. seq., ten cases, all infected by one person). Elsenberg reports in *Gaseta Sekarska*, No. 18, another case, which is interesting because only the discovery of tubercle bacilli by the microscope enabled the observer to differentiate the affection from syphilitic infection, the surface of the ulcer being gray, the lymphatic glands greatly swelled and suppurating. The operator who had infected the child, to outward appearance seemed healthy, though he coughed a little. Tubercle bacilli were found by Elsenberg, in the operation, and also by Prof. Hoyer. Laryngoscopic examination revealed some true tubercles on a somewhat infiltrated base in the interarytenoid space.—*St. Petersburg Med. Wochenschr.*, 1887, No. 1.

TORSION OF AN INCISOR TOOTH.—MR. SMALE mentions in the *British Journal of Dental Science* the, case of a boy, aged 8, who had the right upper central incisor twisted so that the mesial surface presented towards the lip. The tooth was grasped firmly by a pair of straight-bladed forceps and twisted into a good position, care being taken to press the tooth firmly into the socket during the operation. It was tied to the surrounding teeth with silk twist in order that it might not return to its old position. A week afterwards it was quite firm, the tooth could be tapped, and he could distinguish between hot and cold applications. There was no discoloration, and the gum was quite healthy. Torsion may be used freely before the patient arrives at the age of 12 years, and should be always done at one operation. It is only applicable to the incision.—*Lancet*, Jan. 20, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, MARCH 19, 1887.

THE PATHOLOGY AND TREATMENT OF EPILEPSY.

At a recent meeting of the New York Academy of Medicine PROFESSOR WM. H. THOMSON, of the University Medical School, read a paper on the "Pathology and Treatment of Epilepsy," based on notes of sixty consecutive cases in practice, in which he advanced some rather unusual views, among which was the opinion that all convulsive seizures of an epileptiform character, whether due to a temporary peripheral irritation or not, as convulsions from dentition, for example, really belong to true epilepsy.

Dr. Thomson regards *suddenness* as the invariable and essential element in epilepsy; it is the single truly sudden disease, the only affections resembling it in this particular being laryngismus stridulus and spasmodic asthma, though in these the suddenness is found not to be absolute as in epilepsy. Apoplexy, hemiplegia, sunstroke, etc., being accidents, cannot be strictly compared with epilepsy: nor are hysterical and neuralgic attacks so sudden as those of epilepsy. Furthermore, Dr. Thomson regards *petit mal* as the most real form of the disease. In regard to the cell discharge or explosion theory, the views of Hughlings-Jackson, and Nothnagel's "convulsive centre," he thinks that if no other form of epilepsy than *petit mal* had ever been observed the explosion theory would never have been proposed. With Jackson and Gowers he is willing to grant that there is a motor discharge in every convulsive seizure; but that it is a different matter to say that an attack of epilepsy is a motor discharge. He believes all motor phenomena except the voluntary to be under the control of sensory impulse, and a sudden suspension of the regulating sensory impression may result from a variety of causes. Any irregular motor phenomena are therefore due to a loss of the customary sensory influence; and this, he thinks, explains the clinical facts of epilepsy without the necessity of supposing any additional nervous force being called into action.

He considers the phenomena of epilepsy to be the effect of an afferent sensory impression when some abnormal condition of the nerve centres is present. What this condition may be he is not prepared to say, but it seems most probable to him that it is one of malnutrition. If asked if he would assert that all cases of epilepsy are attended with sensory impressions in the face of the well-known fact that in certain instances there are definite lesions of the brain present, he would reply that we do not get rid of the sensory element when we enter the cranial cavity. A syphilitic gumma of the brain may be as truly an excitant of sensory irritability as an external impression. He does not hesitate to acknowledge that a motor centre may be excited by the application of an electric current after trephining the skull; but the explanation of the phenomena noted he believes to be found in the fact of a wholly unaccustomed irritation in a centre habituated to act in response to sensory impressions. The hypothesis of a sudden suspension of the ordinary suspensory functions, he thinks, fully accounts for all the phenomena observed in epilepsy.

As regards his treatment of epilepsy Dr. Thomson says that of late years, since he has based his therapeutic measures on the hypothesis that the lesion of epilepsy is to be found in the sensory, rather than the motor, centres, he has grown much less skeptical of the advantages of treatment in this disease than formerly. The first thing to be aimed at is the improvement of nerve-nutrition; and by far the best agent for this purpose is cod-liver oil, which he prescribes as regularly in epilepsy as in phthisis. Phosphorus is also a useful remedy in this connection. Like the great mass of physicians, he has found the bromides the best agents for controlling peripheric irritation, and he has found cod-liver oil of very good service in counteracting their debilitating effects. When there is persistent cortical irritation, as indicated by muscular twitchings during sleep, he employs, with happy results, the bichloride of mercury, or the oleate by inunction. He uses belladonna or oxide of zinc in all cases in which the attacks show any connection with disturbances in the alimentary canal, and when there is reflex irritability he uses chloral hydrate or Hoffman's anodyne, in addition to the bromides. Digitalis he uses in all cases characterized by vas-

cular disturbance, or where there is involuntary discharge of urine during the attack. He is also in the habit of using, in a certain proportion of cases, a red pepper pack at night; 1 drachm of capsicum being used to the pint of hot water for this purpose. In one case a patient who ordinarily had two epileptic attacks a day did not have a single one for seven weeks after this measure was resorted to; the disease being completely arrested by the peripheral excitation thus secured. In his opinion, an important part of the treatment is the total exclusion of all butcher-meat for a period of two years; though poultry and fish are permissible. Animal diet, he believes, predisposes to convulsions in direct proportion to the quantity in which it is used. The tendency to convulsions in the carnivoræ, and the absence of this in herbivorous animals, are apparently due to the respective diet in each class. Another thing to be avoided is eating fast, as the too rapid mastication and swallowing of food seems to act directly on the convulsive centre of the medulla oblongata. It is possible that the habit of eating too fast may thus induce confirmed epilepsy. These points show, he thinks, the direction in which efforts should be made by which better results may be expected in the future, and the treatment thus be relieved of the grievous burden of suspicion which it has borne so long.

It could scarcely be supposed that such views as to the pathology of epilepsy could be expressed before the Academy without discussion. It may be questioned, as Dr. Putzel remarked, whether anything can be considered epilepsy unless the convulsive habit is established. But we cannot so certainly draw a line of demarkation between infantile convulsions and true epilepsy, as Dr. Putzel seems to think, as clinical experience shows that the tendency to convulsions in children is closely associated with the epileptic diathesis, and that accidental convulsions are often the beginning of lifelong epilepsy; and we also know that many cases of epilepsy give a history of convulsions in childhood. But a consideration of the pathology of epilepsy, and epileptiform convulsions, would carry us beyond the limits of this article.

With one exception it seems that Dr. Thomson's views as to the treatment of epilepsy were generally endorsed. Dr. Wm. H. Draper, however, did not agree as to the danger of animal food; on the contrary, he is inclined to think that the origination of an attack is more likely to follow the ingestion of starchy foods, and he prefers that his patients should use animal food and milk, and a diminished quantity of the carbo-hydrates; and from this he has had very good results.

At the same meeting of the Academy DR. A. D. ROCKWELL read a paper on *The Value of Electricity in the Treatment of Epilepsy*, in which, among others, he drew the following conclusions:

Electricity possesses a certain value in the treatment of epilepsy.

It is not claimed that it can alone cure the disease, but in many instances it is of great service as an adjuvant to the bromides.

In the nocturnal variety its good effects are especially marked.

The methods of application to be used are central galvanization and general faradization.

It is important that the agent should be administered with great care. Anything like a shock should be avoided, and the applications should not be continued too long at a time.

The treatment should be kept up, with suitable intermissions, for two years after all epileptic symptoms have disappeared.

MEDICAL LAWS.

In another department of this number of THE JOURNAL may be found a copy of the new law adopted by the Legislature for regulating medical education and practice in the State of Minnesota. As a whole the law is much better adapted for the accomplishment of its legitimate purposes than most of the State laws hitherto enacted. Section 3 of the Act, by enumerating the *branches* required to constitute a minimum standard of medical education; by requiring the candidate to furnish proof of having attended three annual courses of Lectures of not less than six months each, and to undergo a full examination, both scientific and practical, by the State Board of Examiners, without any regard to college diplomas, is in strict conformity with correct principles of Legislation as briefly stated in THE JOURNAL for March 12, 1887. The *Section* would have been more complete and efficient if the term of study had been specifically stated as not less than three years, and if to the branches of study required, had been added, attendance on Hospital Clinical Instruction during the second and third courses of Lectures. Section 1, which requires the Governor of the State to appoint a State Board of Medical Examiners consisting of nine members, and defines their tenure of office, is very defective in some respects, and in direct violation of sound principles of Legislation in

others. For instance, the *Section* makes no allusion to any standard of qualifications, professional, moral, or social, necessary to render a person eligible for appointment by the Governor as a member of the Examining Board. So far as the language of the law is concerned, he may select at least *seven* out of its nine members from the ranks of mechanics, merchants, lawyers, or saloon-keepers, or he may select physicians who have not been out of college six months or practised in the State six days. And yet, as if to show the climax of inconsistency the law specifically declares that "no member of any college or university having a medical department shall be appointed to serve as member of said board," but at least *two* of the board *must be* "homœpathic physicians," whether two such can be found in the State or not. Doubtless the Legislature of Minnesota intended that the Board of Medical Examiners should be composed of members of the medical profession, and quite probable that the Governor will make his appointments in accordance with that intention. But it would have been very much safer, more in accordance with correct principles of Legislation, and more consistent with the equality of citizenship, if the law had clearly required the Governor to appoint a State Board of Medical Examiners consisting of nine members of the medical profession, of good general and medical education, of good reputation, and not less than five years resident practitioners in the State, and avoided all invidious distinctions not founded on personal qualifications.

THE TREATMENT OF WOUNDS OF THE LIVER.

Traumatic lesions of the liver have but a small place in surgical literature. When deep, especially, they are usually considered necessarily fatal on account of the resulting hæmorrhage, and on account of the peritonitis which will most probably result from the hæmorrhage. There is a reported case in which in a deep stab wound of the liver followed by hæmorrhage sufficient to distend the abdominal cavity, laparotomy was performed, the peritoneal cavity cleansed, and sutures placed in the liver wound. The patient rallied from a state of profound shock and collapse, and remained in an apparently good condition for about twelve hours, and then died suddenly. The peritoneal cavity was clean, the liver wound was closed, and there were no signs of peritonitis. According to Elder the mortality of wounds of the parenchyma of the liver is 78 per cent. for incomplete ruptured wounds, 39.7 per cent. for shot wounds, and 37.5 per cent. for cut and stab wounds; but Meyer regards this estimate as too low.

From a paper by BURCKHARDT, in the *Centralblatt für klinische Chirurgie*, No. 7, 1887, it seems that modern antiseptic principles applied to wounds of the liver will considerably diminish the high mortality. The case is of sufficient interest to give rather fully: In March, 1886, a workman was stabbed in the left epigastric region, a little below the border of the ribs, and after receiving temporary medical attention he was taken to the Stuttgart Hospital. On admission he had not lost consciousness, but there were all the symptoms of considerable internal hæmorrhage. In the left mamillary line, on a level with a free border of the ribs, was a wound about two and a half centimetres long, in which two sutures had been placed. The belly was distended; and there was dulness in the lower abdominal region, but above and to the fifth rib on each side percussion was tympanitic. The patient was chloroformed, the wound reopened and enlarged to 12 or 14 ctm., and search was made for the origin of the hæmorrhage. When the peritoneal wound was opened a large quantity of black blood escaped. Several loops of intestine were replaced and carefully sponged. The situation of the wound was such as to give the idea that hæmorrhage proceeded from a large mesenteric or gastric branch, and the liver was not thought of, as no portion of this viscus was perceived. The knife had entered transversely, however, and on drawing the liver towards the wound Burckhardt found a wound in the left lobe of the liver 3 ctm. long, from which a considerable quantity of blood was flowing. The probe showed that the parenchyma of the organ was penetrated, below and to the right, to the depth of 5 or 6 ctm. The state of the patient was now such that it was necessary to terminate the operation as soon as possible. He introduced and pressed into the wound of the liver six or eight pieces of iodoform gauze, letting the ends hang out. The abdominal cavity was then cleansed, the intestinal loops again cleansed and replaced, and the external wound sutured in its whole extent, leaving, however, a place above for the introduction of a drain and for the removal of the pieces of iodoform gauze. A complete antiseptic dressing was then applied. The patient rallied well, and gained, in spite of a pneumonic complication, probably the result of an embolic detachment from the liver. When the first dressing was taken off there was a small escape of blood, the remains of the peritoneal extravasation, which was soon followed by a small quantity of bile. On the sixth day the gauze was removed and replaced by a new drain. On the twelfth day bile ceased to escape, and after nine weeks there was only a small

fistulous tract, caused by a piece of gauze which had been forgotten; when this was removed recovery was soon complete.

Burckhardt calls attention to the value of tampons of iodoform gauze as an excellent means for arresting hæmorrhage, and, in such cases, of preventing the escape of bile into the peritoneal cavity. In spite of the friable nature of the liver sutures are perfectly practicable, as experiments on animals have shown; but they are seriously inconvenient. An incised wound of the hepatic parenchyma must involve some of the bile-ducts, and it is unlikely that these could be sutured with convenience or success; and to simply suture the liver tissue about them would result in escape of bile into the peritoneal cavity. But a piece of iodoform gauze placed in the wound will arrest both hæmorrhage and escape of bile.

AMERICAN MEDICAL ASSOCIATION.—We invite the attention of our readers to the official notice of the next meeting of the American Medical Association in another column of this number of THE JOURNAL. The general sessions will be held in Central Music Hall, most conveniently located and admirably adapted for the purpose. There are gratifying indications of renewed interest in the Association in the most widely separated parts of the country. Let full delegations come from the East, the South, the West and the North; Chicago has room for all, and will give to all a cordial welcome.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 26, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

H. M. CUTTS, M.D., Secretary.

The discussion on DR. JOS. TABER JOHNSON'S paper on

CÆSAREAN SECTION

(see pages 189 and 270), was continued.

DR. J. F. HARTIGAN said that although he had listened attentively throughout this discussion, nothing had been said to change his first impressions as to the proper procedure to adopt when confronted with such a calamitous situation. The Cæsarean operation is so ancient that its origin can hardly be traced. 'Tis enough to say that it was performed on the undelivered dead woman centuries before it was resorted to on the living. So far as he could ascertain, the first published histories of this operation on the living female—400 years ago—are just as misguiding as recent statistics; for the reason that only those have been reported that showed the most success, and we are left in the dark as to the numerous failures. In other words, more than 75 per cent. of the cases published have perished; while if the same pains were taken to bring to notice *all* the unfortunate cases, the supporters of this most formidable operation might be reduced to a minimum. The discussion of this subject has been going on elsewhere lately, and much of it seems to have been inspired by certain religious sentiment. But this is not a body of religionists. We meet to discuss medical subjects on a purely scientific basis, and to stand by those who place their lives in our hands, and *trust* us with them. He asked if it was right that a valuable life should be placed in further jeopardy in order to attempt to save one that has at most but a precarious existence. We will suppose that the operation is performed, and the child survives; it has only even chances of living up to the fifth year, and would such survival fill up the void left by the death of its mother? No, sir; our first and sacred duty is to the patient. In that terrible hour of trial we all have heard the cry, "Whatever you do, Doctor, save my wife!" Is there a man in this room who would turn a deaf ear to such an appeal, or who would any longer hesitate as to where his duty laid? He said he was no craniotomist, but the teachings of ages, as well as the dictates of conscience and humanity, compel us to treat our patients as we would treat ourselves, and to save that life which is of the most value.

My position on this question is best expressed in the following extract from Cazeaux and Tarnier, just published: "This operation may be practiced on the living female whenever the natural passages through which the child has to pass are so narrow, or so obstructed, that a delivery by the application of the forceps, or by symphysiotomy, is wholly impossible; and when the mutilation of the child itself would not permit its extraction without exposing the mother to the greatest dangers. It may likewise be resorted to for the purpose of saving the infant when the patient dies in the advanced stages of gestation."

DR. G. WYTHE COOK said that although we consider lives of equal value, still if confronted with the problem of an unborn child, the sacrifice of whose life was necessary in order to save that of the mother, there could be no doubt in his mind as to the choice. If more lives can be saved by the Cæsarean section than by embryotomy, then Cæsarean section is the operation to be done, for it is a serious thing to take the life of an unborn child, or even to teach that it may be done. Successes in Germany indicate that much may be hoped for in the direction of Cæsarean section, though the statistics of England and this country are not so encouraging.

He said that he spoke feelingly upon the subject, as some twelve or more years ago he was so unfortunate as to be called to a case in the country in the care of a midwife, in which the arm had been pro-

truding for twelve hours; the shoulder was impacted, but the child was still alive. Being unable to turn and deliver it, a consultation was called, the physician attempted to turn, but was unsuccessful, as Dr. C. had been, though the patient was completely under the influence of chloroform. The consultant agreed that the child could not be born alive, but would not consent to Dr. Cook's proposition that embryotomy should be immediately done, as the child was still alive, and advised delay. Dr. Cook said that under the circumstances he could but wait. The child finally died, and was removed by embryotomy. The mother had septic fever, and died also. Here was a case in which both mother and child might have been saved by Cæsarean section. It is certain that nothing was gained by not performing embryotomy. When it is taught that Cæsarean section is the operation to be done in most of these cases, when the child is alive and can not be delivered *per vias naturales*, there is no doubt in his mind but that the country practitioner will have the nerve and the skill to perform the operation, and his successes will compare favorably with those of his metropolitan brother.

Dr. S. C. Busey said that he must defend himself from having made any distinction between the relative ability of the country and city practitioner. In his remarks he spoke of the "ignorant" as a class, and made no distinction as to where they lived.

Dr. T. E. McArdle thought that the Cæsarean section is being taught as *the* operation. At a meeting of the New York Academy of Medicine, June 8, 1886, Dr. Charles Carroll, Secretary, read a paper on the "Future Influence of Surgery and Surgical Resources upon Obstetrics." In the discussion, as reported by the *Medical News*, June 12, 1886, Dr. Polk is quoted as saying: "Before the obstetricians of to-day lies the grandest problem that can possibly engage their attention, viz., that in connection with the Cæsarean section I do not doubt that within the next two years it will be possible to eliminate entirely from practice the most repulsive of all procedures, the destruction of the life of the fœtus by craniotomy. When this has been accomplished there will have been achieved the greatest work ever done in surgery, and the honor of it will belong to the obstetrician."

Dr. Hartigan said that out of 164 cases, according to Heyner, 102 mothers were lost, or sixty-two per cent. But there were only 101 children survived, the rest being still-born, and as only one-half are expected to attain the fifth year, this leaves only fifty children saved of the 164—showing and infantile mortality of seventy per cent. So that, out of the whole number—328—only sixty-two mothers and fifty children survived—112 in all. Now had craniotomy been performed, it is not unreasonable to suppose that at least 150 mothers would have been saved. Therefore, without regard to the relative value of the lives, who can sustain the Cæsarean section in the face of such figures?

Dr. J. R. Brownell said that, believing that the operation of craniotomy, on the living fœtus, is a perfectly justifiable operation under certain conditions, and that, in the present state of medical, surgical, or obstetrical science and human deformity, it cannot be abolished without the sacrifice of life, which cannot be saved in any other way, he could not permit to go unchallenged some of the statements made. Dr. McArdle calls it "a deliberate and cold-blooded murder," and classes it with criminal abortion. That those of us who have been forced to the operation of craniotomy on the living child should not be accredited with a conscience, rather surprises me. Quoting from the debate of the last meeting we have the following: "The life of the child must always be considered, even at the expense of increased risk to the mother." "Who will compare the unlimited possibilities of the unborn child with the life of a woman who cannot bring a viable child into the world?" I contend that, if the two operations afford only equal chances of saving the life of the mother, it is our duty to give the child a chance for its life, and perform Cæsarean section. If, however, there is greater risk to the mother in submitting to Cæsarean section, or, as is often the case, all odds are against her, we must endeavor to save her by sacrificing the child, who has no certainty of life by the Cæsarean section. Shall we only consider the life of a woman of value because she can bring a live and viable child into the world? Is she only to be considered as a child-bearing machine? If so, a man is justifiable in putting away the wife who cannot bear him children, and seeking until he finds one who can. He who acts under such "conscientious discharge of duty" presumes beyond his prerogative in constituting himself jury, judge and executioner. I would ask if it may not be as much the fault of the child's head in being too large, as of the pelvic diameters in being too small, the woman having already been a mother, with little less than a normal pelvis? Have not instances occurred where the descending head was so large as to be out of all proportion to a perfectly normal pelvis? Increase our knowledge of pelvimetry until we can ascertain, with mathematical exactness, the diameters of the pelvis, and yet we have no positive means of measuring the size of the child's head in the mother's womb until it is too late to do anything but sacrifice it, that we be not responsible for two lives instead of one. Will the most thorough knowledge of pelvimetry prevent the necessity of craniotomy, or embryotomy, in the case of locked heads in twin births? the retained after-coming head in breech presentations? or in transverse presentations, when the membranes have ruptured? the distorted body forced low down into the pelvis, so low down as to preclude all possibility of moving it? All this occurring before we saw the patient, possibly due to her living at some distance from us, and consequently unavoidable. Are not these instances, if there were no others, in which the operation of craniotomy on the living child would be justifiable? When version and forceps have failed, or are rendered impossible from the peculiar nature of the case, the woman's life slowly, but surely ebbing away, from protracted pain and suffering, her life further jeopardized by damage threatened to the lower uterine segment and soft parts through protracted continued pressure, the child under any other circumstances immovable, the disproportion between

the head and the pelvic diameters so great as to preclude all possibility of its passing, and when Cæsarean section, under such circumstances, shows a maternal mortality of from 80 to 90 per cent., if we hesitate we will be responsible for two lives instead of one.

DR. BUSEY disclaimed any intention on his part of discussing the subject upon personal or religious grounds, and he had so stated at the beginning of his remarks.

DR. J. TABER JOHNSON, in closing the discussion, said that while one was at a disadvantage in closing a discussion which had lasted over three evenings, there were several points to which he wished to call attention. In the first place, he desired to thank Dr. King for his kind and complete endorsement of his paper. Dr. Thompson had said that I recommended craniotomy in the United States and Cæsarean section in Germany, where there were better operators. Then he says that craniotomy must sometimes be done even to save the mother. In this last remark we agree, so that it needs no discussion.

My paper was confined entirely to Cæsarean section in the United States, of which I had full data; and, knowing the feeling upon the subject, I entitled it "Can the Cæsarean Section Supplant Craniotomy in the United States at the Present Day?" To this the answer was, No. Now, while I endorse all that has been said in favor of Cæsarean section, my conscience would not permit me to agree that craniotomy should be entirely abolished. In my opinion, there is no comparison between the value of the life of the fœtus and its mother, and our duty is to her first. Save them both if we can. Dr. Thompson says that the Cæsarean section is a "cleaner and more perfect surgical procedure"—these words occurred in my paper, so there again there is agreement. The statistics quoted in my paper were not made by me, but by the surgeons of the United States who performed the operations. These showed that of nineteen Cæsarean sections done in the United States during the past ten years, seventeen of the women had perished and fourteen of the children were stillborn, and that of the five Sänger operations performed within the last five years all of the mothers died. That is not a brilliant showing for our operators, especially when compared with the results obtained in Germany.

Dr. Busey blames me, and also Dr. King, for stopping the wheels of progress by teaching that a child could be "killed at will." Until there is a better average than 90 per cent. mortality for Cæsarean section in our country, no one ought to be blamed for holding on to craniotomy a little longer. To use Dr. Busey's own way of arguing, let us compare the last nineteen Cæsarean sections in the United States with nineteen imaginary craniotomies. In the former, with the possibility of saving thirty-eight lives, only seven were preserved; while in the latter, although we start with only a possible nineteen, the number of saved would not probably be as low as seven. Harris says of this mortality in the United States that "it makes him sick at heart to think of it;" and Parrish says "it is a terrible mortality, and should make American operators hang their heads in shame." I do not think that Dr. Thompson himself would do or favor the repetition of an operation in general surgery that had 90 per cent. mortality, or, as Dr. Busey would put it, out of thirty-eight lives involved, one that would only fail to "immediately kill" seven.

Dr. Meadows has been quoted as being in favor of totally abolishing craniotomy. On p. 270 of his book, however, he states that he has performed "sixteen craniotomies with only two deaths." He probably could not have saved as many mothers by the Cæsarean section. In speaking of the Cæsarean section, on p. 292, he refers to a patient as "leaving her to the terrible prospect of Cæsarean section;" and on p. 293 says: "I fully share Dr. Barnes's dread of the Cæsarean section." This does not look as if Dr. Meadows was a very ardent supporter of Cæsarean section, whatever his opinions of craniotomy. For his part he would agree with Bedford when he says: "The man who would *wantonly* thrust an instrument of death into the brain of a living fœtus would not scruple, under the mantle of night, to use the stiletto of the assassin." Those who would *wantonly* kill a child; those who speculate in human life; those who "kill at will," are the ones he would condemn. The term "murderer" is a rather harsh one to apply to men who are acting as conscientiously as those who do the Cæsarean section. Who does the "killing" when Cæsarean section is done when delivery is impossible except by craniotomy, and both mother and child die? Might not the broad-minded physician have saved the mother? The question is submitted to the husband, and we hear the cry, as Dr. Hartigan says, "For God's sake save my wife!" There is no love for the unborn child under the circumstances, while the husband does love his wife and would oppose the risking of her life. Who of the audience would submit his wife to the "increased risk" favored by one speaker? Where do we go for our authority in these matters? and if we had a suit at law, to whom or what should we refer? To the text-books—and there is not a text-book published to-day that does not tell how and when to perform craniotomy. If we were to pass a resolution to-night, declaring that the doctors of the District should never do craniotomy, and should adhere to it, the people would not have us in their houses, because they would consider us men who did not know our duty to humanity; or if we did, would not perform it.

Prof. C. Braun, who has successfully performed several Cæsarean sections, and the Porro operation three times, states, on p. 691 (Lehrbuch der Gynäkologie) when the operation should not be, as well as when it may be done. He says: "This operation is not permissible when the parturient woman, in full consciousness and without indirect coercion, declines the Cæsarean section. Further on he says: "It is not right to subject her to this operation without her consent, when she has been rendered unconscious by disease, anæsthetics, poisons or intoxicating drinks." In this Braun differs somewhat with Drs. Busey and McArdle, and agrees with me that craniotomy should sometimes be done. Dr. Busey says that craniotomy is inadmissible in the justo-minor pelvis, and quotes Lusk and Taylor to prove this assertion. As a mat-

ter of fact, they only condemn it in what we call the higher grades of the deformity. As against this assertion Merkel reports, out of 100 craniotomies, thirty-seven in the generally contracted pelvis with only two deaths. Also we find that C. Braun, Spæth, Schrœder, Créde, Spiegelberg, Charpentier and Barnes explicitly advise the performance of craniotomy in the lower grades of the generally contracted pelvis. I would add to these Cazeaux and Playfair, and refer to the views of Parvin as quoted in my paper. Dr. Busey quoted four men as taking ground against craniotomy. Of these Lusk (p. 482), says that, under certain conditions, "delivery of the child without perforation is often impossible," and I personally know that Mr. Tait does not believe in the total abolition of craniotomy. Dr. Busey has discussed the question from the proper standpoint of its scientific aspects, and left out personalities, which is difficult to do in such discussions. For my part, I desire to discuss it in the same spirit. Drs. Bromwell, Hartigan and Cook have also viewed it from the same aspect. The latest speaker says, however, that "no man is able to say which life is of most value." Perhaps if the mother were a relative of ours there would be no difficulty in making up our minds. But Dr. McArdle, at the last meeting, was not quite so impersonal. In his written remarks, he quoted largely from my paper. Dr. McArdle was the first in this city to suggest the total abolition of craniotomy, and therefore deserves the title of reformer. I cannot endorse his position, and have not the time and patience to discuss the peculiar points made by him.

The public and the profession are not yet ready for the abolition of craniotomy, and even most of those who talk against it admit that there are cases in which it gives the best, and perhaps the only chance to the mother. When there is a doubt in a case as to which operation is the most expedient, one always wants advice and counsel. What is the use of sending for a man who will not judge by the symptoms in the case, but who is bound by a cast iron rule never under any circumstances to perform craniotomy, whose opinion you know is adverse? You are aware that it cannot be changed by evidence or reason, and are thus debarred from sending for him. In the case reported by Dr. Cook a living child was *allowed* to die by delay and then delivered by embryotomy. Its mother died also as a result of this policy. If embryotomy had been done sooner, in accordance with Dr. Cook's wishes, and with proper arrangements, the woman would probably have been saved. Dr. McArdle makes it appear that Polk teaches that craniotomy should be abolished. Polk only says that he *hopes* it will be abolished in two years; and I unite with him and all those who would utterly abolish craniotomy in hopes that medical science may, sooner than that even, arrive at such a state of perfection as to render "sacrificial midwifery' unnecessary; but at present, as argued in my paper, I cannot favor its *complete* abolition. I would join hands with the half dozen who agree with Drs. Busey and McArdle, and work with them to that end—but I believe now with Barnes, "that as yet the total abolition of craniotomy is an aspiration, not an accomplished fact."

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 9, 1887.

(Concluded from page 278.)

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. H. A. KELLY presented the

RESULTS OF SOME GENERAL WORK IN ABDOMINAL SURGERY WITH CASES AND SPECIMENS.

Many here to-night remember the time when the large cystic ovarian tumor was considered the only indication for abdominal section, and, if other conditions were accidently discovered, the incision was simply quietly closed. The dangers of the operation itself were so great that surgeons were loath to interfere until the wretched condition seemed to warrant the risk. As, however, our race cultivated a familarity with the peritoneal sac, and learned its limits of toleration and intolerance, a bolder and more successful work was entered upon. With dropped pedicles, innumerable ligatures for hæmorrhage, peritoneal toilet, drainage tube, and above all, an unremitting care to secure *microscopic* cleanliness throughout, we have become masters of the situation, and our failures, when they occur, are no longer *mysteries*. And with these improvements has come a recognition of greater variety of indications for abdominal section, until, as to-night, I am able to present, out of twenty-eight successive cases, at least nineteen separate morbid conditions.

In the removal of small tumors in the pelvis, in the removal of ovaries and tubes not to the naked eye diseased, we are most often compelled to operate for *pain*. The patients themselves, *seeing* nothing amiss, are very loath to submit to "being opened" until their misery makes life a burden—at least this has been my own experience with women, to whom I always explain, in the fullest possible manner, the exact nature of what I propose to do, and its consequences. It is gratifying to the operator, who has finally been driven to this expedient, to find gross lesions suitable for class demonstrations, but the most typical relief often comes where the disease cannot be so easily demonstrated; and in cases where there are palpable tumors, the surrounding infiltration and cellulitic inflammation are often serious enough to delay convalescence, for a long time defeating the operator. Thus, if I were asked, in my own work, which of my cases had given the most gratification—that is, where had the relief been most typical and striking from a condition of suffering—I would point out a patient who was for more than two years unable to take a step on account of the great pain in the right ovarian region; in addition, she was a most wretched sufferer throughout the whole time. There were no gross lesions in the ovaries, and it was long a question with me whether she had not some other serious organic disease, which question I debated under the most varied and patient efforts at general and local treatment, until, with the removal of ovaries here shown, she rose up as if a great weight had been lifted off her, and went

home to her parents and friends, a walking miracle.

Another case, well illustrating this point, is that of Mrs. W. She suffered ever since her first menstruation, from pains which left her a most degraded picture of misery when she came to my office. I found the remains of chronic ovaritis and the wiry tubes of a chronic salpingitis and perisalpingitis, which had contracted down so tight and adhered to so many surrounding structures that they were exposed and removed with the utmost difficulty. This patient has gained eighty pounds since the operation. These results, and some others I might detail had I time, are undeniably brilliant; but cures are not always so typical, and I am still often satisfied in this, my work, if I can but remove one element (perhaps the most distressing) of my patient's sufferings. If my patient can only come back to me and say, "you have taken away that dreadful pain in my back and stomach; life is now bearable, before it was unbearable," I am well content. One of my patients exhibits this well. She had a rapidly growing tumor in the right ovarian region, which seemed in a most unaccountable manner, to prostrate her general health. I decided this to be a case of extrauterine pregnancy, and I believe my section proved it. She is now like another woman, although still under treatment for an induration of the left apex, undiscoverable before operation.

I do not claim wonders for this field of work. I claim for it what is asked for other fields of our art—that the *results* justify the means. It is of *results* I wish now to speak, with a brief preliminary as to *difficulties*. The difficulties encountered in handling small pelvic tumors are often very great, far exceeding that of removing an ordinary cystoma.

First, the abdominal walls, which have never been distended, press tightly down upon the contents, and the recti pinch the fingers like a vice, utterly defeating any effort to catch or raise pelvic viscera, and this in spite of ether and chloroform. I have been obliged twice to overstretch the recti before I could proceed.

Secondly, in case of chronic peritoneal inflammation, the bleeding from the more superficial vessels of the abdominal wall may be extreme.

Thirdly, the intestines, in this close sac, often cling to the fingers until they feel as if they were clothed with several pairs of gloves, and just as useless.

Fourthly, when the patient is very obese, the embarrassment of the operator is greatly increased, requiring a much larger incision, prolonged manipulation, with difficulties of closure and subsequent dangers.

Fifthly. Cellulitis, so common a concomitant, so draws down and anchors everything in the pelvis, that the structures are elevated with extreme difficulty, and only a pedicle in the *technical* sense, can be secured. The dangers of secondary hæmorrhage from this kind of a tie is, I know, very vividly before the minds of all operators of experience. It is, at times, about like tying the apex of a broad-based pyramid. I tied off some broad ligament structures on a fibro-cystic tumor the other day, which impressed me for all the world like putting a ligature on a paper wall.

Lastly. These smaller diseased structures often become parasitic on neighboring tissues and organs for their blood supply, and when they are torn loose, the bleeding is alarming; and it may be deep down in the pelvis, possibly requiring an enlargement of the original incision, and then only seen with the utmost difficulty of exposure and illumination.

[DR. KELLY then read a table of his operations in 1886.]

In one of the patients operated on in 1886, I did what has, I believe, never been done before: opened the abdomen upon a diagnosis of hypertrophic cirrhosis of the liver, with the intention of puncturing—hepatophlebotomy. The patient, about 40 years of age, had a very large ascites, which had been treated for some weeks, but never tapped; and with full confidence in the safety of a simple incision, I made a free opening, large enough to admit two fingers, just below the umbilicus, thoroughly emptied the peritoneal cavity of two bucketfuls of fluid, and on reaching the liver found the organ contracted and hob-nailed; I consequently closed the incision, which healed perfectly. The fluid reaccumulated very slowly until the man died, some weeks after, in the natural course of the disease. My friends, Dr. R. P. Harris, and Drs. Freeman and Bradford, residents of the Episcopal Hospital, were present. I had long intended to use this direct method of abstracting blood from the liver, in view of my experiences in hospital and private practice since, before Dr. George Harley recommended plunging a trocar into the liver through skin, subcutaneous tissues, and two coats of peritoneum, in the right hypochondrium, with the same end in view—hepato phlebotomy. If, however, I am going to draw blood from this organ in a state of inflammation, I prefer an incision free enough to allow me to handle the organ, and, under full control of the eye and touch, to direct the trocar to the proper place, free from the danger of wounding other structures or large vessels. The incision should be made just above the umbilicus.

As to another case, that of my office nurse, I will content myself by briefly remarking, that she suffered constantly for four years with a dragging pain in the left side, and two years ago last December, she was tapped for what was believed to be a large ovarian tumor. The fluid was straw-colored and coagulated spontaneously in the bucket. She came to me from Ogdensburg, N. Y., twenty months ago. There had been no reaccumulation of the fluid, but she suffered constantly with dragging pains in the left side. I found here masses attached to the left cornu uteri, which I mapped out in my book; but, to my astonishment, I found in the course of a few weeks, while under treatment, that the tumor diminished and seemed to have shifted its site. Bimanual examination, while still revealing well-defined masses in the neighborhood of the uterus, yet yielded such a different find that I was disposed to distrust my records. As her suffering increased, I made an incision last spring, and found the intestines universally adherent, like one great sac, but free from the abdominal wall; the pelvic structures were so bound up that I could define nothing. Some serous fluid oozed up into the

incision and coagulated *in situ*. This was carefully cleaned out of the whole peritoneum, a piece of membrane, containing isolated tubercular granulations, snipped off for microscopic examination, and the incision closed. She apparently made a perfect recovery, and returned to New York, doing a great deal of hard work all summer, (had not been so well for twelve years). She returned to me upon my return from Europe, and, until seven weeks ago, remained in perfect health. The old pain then began to distress her again, and with it was a continuous elevation of temperature. After waiting until it was impossible for her to drag herself around any more, I again made an abdominal section, by a smaller incision to the right of the old incision, for the purpose of cleaning out the cavity and dusting well with iodoform. She insisted upon preparing everything for the operation herself, and lay down upon the table and submitted to the section *without* a general *anæsthetic*. I made multiple hypodermatic injections of a few drops of a 4 per cent. solution of cocaine in the line of the incision. The pain of the incision was but slight. It increased with the introduction of two fingers within the peritoneum, but was easily bearable. In fact, once she warned Dr. R. P. Harris, who was present not to make her laugh. The only severe pain felt was in handling the matted structures in the left side of the pelvis. Sixty-two grains of pure powdered iodoform were sprinkled over the peritoneal surfaces, the incision closed, and the patient put to bed without the slightest shock or discomfort. She insisted on unbuttoning the jackets worn by the operator and assistant, and was as comfortable from that moment until she rose on the sixth day, to take a drive on the seventh day, as if there had been no operation. All trace of the induration has disappeared and she has since felt perfectly well, although the ultimate result remains very doubtful.

Dr. Jos. S. Neff read the report of a case of

PERFORATING ULCER OF THE STOMACH, WITH CHRONIC PERITONITIS.

Alfred Reed, colored, stevedore by occupation, 45 years old, was admitted to the Medical Ward of the Philadelphia Hospital, December 12, 1886. The family history was indefinite; he had had the ordinary diseases of childhood; pleurisy when about 19; enteric fever a few days later; says he had relapsing fever about twenty years ago, since which time he has often had pains and stiffness in the joints, but not severe enough to prevent him working. During the last year he has had occasional attacks of indigestion, rarely accompanied by nausea and vomiting. Last spring he vomited blood; had sensations of burning heat in the stomach, and other evidences of indigestion, with extreme acidity of the stomach; there was very little pain until the latter part of July or the first of August, at which time it was confined to the abdomen (?), and was constant, but more marked after eating. From this time he vomited after almost every meal, and it was not long before he could retain only liquid food. At first the vomited matter was simply the undigested food, later small quantities of a slimy, watery fluid as well. From that time up to admission he vomited blood, dark in color, small in quantity, but once or twice.

Does not remember any sudden onset of pain, chill, or any symptom pointing to perforation of the stomach, or acute peritonitis. His weight last winter was 190 pounds, but at date of admission he was much emaciated, complaining of severe and constant pain over the upper portion of the abdomen, especially in left hypochondriac region, not being able to bear the slightest pressure. There was a small prominence, slightly firmer than the rest of the abdominal wall, situated below the margin of the ribs, one inch to the left of the median line, ovoid in shape, the horizontal diameter being three inches, the vertical diameter two inches in length. Over this area the percussion note was somewhat dulled—*i. e.*, on light superficial percussion; the motion of the diaphragm was not imparted to the mass. He referred to this point as the source of pain which radiated over the entire abdomen and through to the back.

Physical examination showed the heart to be of normal size, first sound absent, second accentuated, more marked over aortic valve; no murmurs were heard; the temporal and radial arteries were firm aad hard, not compressible, with no perceptible pulse in the wrists. A systolic bruit was heard posteriorly over the thoracic aorta.

The lungs were normal, but many mucous râles were audible in the bronchial tubes.

No increase in the liver or splenic dulness could be made out, as he could not bear any pressure below the diaphragm.

His general condition improved somewhat for a short time after admission; the pain, however, remained constant, and vomiting was of frequent occurence.

He died of exhaustion on January 1, 1887. During the time he was under observation no change of note occurred. The temperature ranged from normal to 95.5°. He vomited blood once only, on December 15, small in quantity, and dark in color. Paroxysmal spasm of the diaphragm commenced December 16, and lasted with intermissions until death. A loud systolic murmur was detected on the 19th, with area of intensity over the apex. The urine remained normal throughout, and much reduced in quantity; specific gravity 1.032; reaction markedly acid, and of high color. No albumen or sugar.

The diagnosis was made of cancer of the pyloric end of the stomach with secondary peritonitis, induration with inflammatory infiltration, and adhesions between the diaphragm and the stomach.

Autopsy. — *External Appearances.* — Body much emaciated. Abdomen scaphoid.

Thorax.—Lungs were normal, except hyperæmia, and were firmly adherent to the diaphragm. No other pleural adhesions.

Heart.—Pericordial sac obliterated by adhesions. Left ventricle large, firmly contracted. Right ventricle small, and partly filled with a firm clot. Valves normal. Aorta shows marked chronic endarteritis

throughout its whole thoracic portion, and extending to abdominal aorta. Left ventricle was small, wall thickened, red, and firm.

Abdomen.—Peritoneal cavity contained a quantity of purulent (?) matter. Peritoneum inflamed, the coils of intestine extensively adherent to each other, and to the liver, spleen, stomach, and diaphragm. There was a sac formed at the hilus of the liver by adhesion of the duodenum with the gall-bladder and under-surface of the liver. This cavity contained purulent (?) fluid with thickened walls. The gall-bladder was flattened from pressure, and contained a small amount of thickened bile. The meso-colon showed inflammatory thickening. The upper surface of the liver was extensively adherent over the right lobe to the diaphragm. The left lobe was intimately connected with the stomach. There was a cavity formed by the anterior surface of the left lobe of the liver, the anterior surface of the pyloric end of the stomach with the diaphragm forming its roof. The right wall of the cavity was formed by the suspensory ligament of the liver, the anterior wall by adhesion of the liver and stomach, the left wall by adhesions between the diaphragm and the anterior wall of the stomach. The cavity was filled with a grumous material, its walls being indurated and inflamed. In the floor of the sac there was an opening a half inch in diameter through the anterior wall of the lesser curvature, about half way between the cardiac orifice and the pylorus, and a half inch to the left of the left edge of the left lobe of the liver. There was also another sac formed by adhesions between the diaphragm, spleen, and cardiac end of the stomach. This appeared to be a blind cavity having no communication with the one just described, or the stomach; it contained a similar looking thick grumous fluid.

Stomach.—Walls were greatly thickened, more marked at the lesser curvature. In the neighborhood of the perforation noted the wall was thinner, the orifice presenting a rounded edge. When opened the mucous surface throughout appeared greatly rigid and mammillated, general thickening being most marked at the pylorus. There was no indication of neoplasm.

Spleen.—Adherent throughout its whole surface, very small, firm, with dark-red fibrous pulp.

Liver.—Right lobe large, the left being small. Flabby cut surface shows a slightly congested parenchyma.

Pancreas.—Normal.

Kidneys were firm, cyanosed, normal in size; capsule slightly adherent; some small cortical cysts; thinning of cortex, and interstitial thickening.

The point of interest clinically is in connection with the diagnosis from malignant disease. The constant character of the pain, the persistency of the vomiting without remissions, the small amount and character of the hæmorrhage, the gradual loss of flesh, with apparent cachexia, and the presence of a painful, non-fluctuating tumor, would warrant a diagnosis of cancer. I should mention, too, the presence of constipation as being of some value.

The circumscribed cavities noted were the result evidently of inflammation from the passage of the contents of the stomach into the peritoneal cavity, the secondary adhesions binding the organs together in such a form as completely to shut off the small cavity in the left side from any outlet, while the larger in the right side still had direct connection with the anterior of the stomach. The cause of the immobility of the tumor upon deep inspiration was undoubtedly due to the fact of the diaphragm itself being thoroughly adherent to the chest-wall over a considerable extent of its surface, and therefore having very little play during the respiratory movements.

DR. HENRY F. FORMAD said: The case of Dr. Neff's is of great interest, from the fact that the patient's life was considerably prolonged by the formation of a sac which retarded the development of peritonitis after the rupture of the ulcer. The case is also interesting, from the fact that it occurred in a male. In some twenty-two cases of gastric ulcer in which I have made the post-mortem, in about seventeen the subjects were females. This agrees with the experience of others. Gastric ulcer is not a rare condition, but many cases are overlooked because physicians are in the habit of opening the stomach through the smaller curvature, and it is here that the ulcer is most frequently situated. In the majority of cases that I have seen, the death was sudden, being due to perforation. In some the death was apparently due to shock, the whole of the contents of the stomach having in many instances escaped into the peritoneal cavity. Death occurred before there was time for the establishment of inflammation. In some cases there was free hæmorrhage, and in one case there was a complete blood-cast of the stomach.

Some of the cases that I have seen have been in drunkards, some have been in hysterical women, and some in the insane. Three of my cases came from the Insane Department of the Philadelphia Hospital. Dr. Dercum informs me that he has met with several cases of gastric ulcer among the inmates of the Norristown Insane Asylum.

DR. ADDINELL HEWSON said: I wish to express my opinion in reference to certain points in connection with the paper read. The speaker stated that he has resorted to the operation for the relief of pain in cases where the diagnosis was not definite and the existence of a tumor not positively made out. In an experience of over three hundred cases, I have not seen one in which relief of pain was not directly afforded by the application of clay. In reference to the stretching of the cicatrix, it has been my lot to see a good many cases of hernia following laparotomy. In one three or four large herniæ protruded. In this case I resorted to the use of a 50 per cent. solution of silicate of soda applied on strips of gauze, such as the late Dr. Paul Beck Goddard used in his collodion dressings.

DR. J. M. BALDY said: I would first refer to the case in which the uterine appendages were removed for metritis. This is a new indication for the operation, and it seems to me that it would be a unique case in which such a procedure would be justifiable. There are many men of large experience who have

not seen an uterus which they were unable to reduce to a normal size without recourse to surgical procedure. In regard to cystomata, it is important that as soon as they are diagnosed they should be removed. It has been claimed that rupture of the cyst is followed in a shorter or longer time by malignant disease not only of the appendages and peritoneum, but also of other organs. It is important in pyosalpinx that the appendages be removed on both sides.

I have seen a good many cases of pyosalpinx operated upon, and in some cases where the disease was unilateral the unaffected tube has been left. In a recent case operated on by Dr. J. Price this was done, and two months later the second tube became involved; on opening the abdomen it was found impossible to remove it on account of the adhesions present.

As a rule, we can discover no disease. There are cases, however, which will tempt most of us to operate. Dr. Kelly's case of simple chronic salpingitis in which he had such happy results is a case in point. A case operated on by myself was just such a one and terminated just as happily.

Dr. J. Price said: In Dr. Kelley's cases it is as yet too early to speak positively with reference to hernia, but his incisions have been short. In the December number of the *Lancet*, Mr. Tait gives a review of this whole subject and of hæmatocele. I wish to argue against the removal of the appendages for defective involution. We have many other methods of treatment which will surely accomplish the same result without resorting to such bold measures. I consider this an unjustifiable procedure.

At present, the surgeon simply presents numbers and percentages of recoveries as representing the exact measure of his skill in operating and care in the after-treatment. Too great importance has been given to bare statistics. The conditions inherent in the patient which determine the result beyond the control of the surgeon are barely considered, nor faults of omission or commission on his part. Perfect evacuation of pus, the utmost cleanliness, and perfect drainage—I mean a high degree of surgical cleanliness.

The growing tendency to hold the surgeon strictly responsible for every unfavorable result has stimulated abdominal operators to great care, and the most careful study of every detail. Hence, the methods of abdominal surgery have become well-nigh perfect.

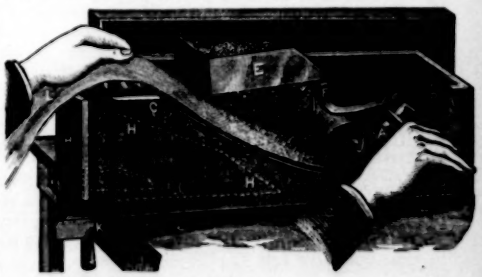
Dr. Kelly said: I have had no practical experience in the treatment advocated by Dr. Hewson; if it can be shown to be practicable in such cases as I have detailed this evening, I will try it. My efforts, however, have been directed toward the establishment of a cure, and not palliation. With reference to the case of enlarged painful uterus, with endometritis, of which Dr. Price has spoken, I desire to make the following statement, and at once prevent any further misconception upon so serious a subject. I hesitated in reporting this case lest I should be misunderstood. I do not wish to recommend a sectional operation for subinvolution or metritis in general. I am weekly treating many such cases without any idea of operative interference. In this particular instance the patient had not only been long under treatment in one of our first hospitals, but I had faithfully tried every means at my disposal for two years—counter-irritation, douches, packing large wedge-shaped excision of the cervical lips, and an Emmet operation on the perineum, hoping by this support, free depletion, and rest in bed to secure a permanent advantage. She was only slightly benefited, remaining a miserable sufferer until I operated, removing tubes and ovaries. The uterus decreased *at once* in size, and is now three inches, with a small hard cervix, and reclines in the sacrum rocking-chair fashion. She has no local tenderness whatever. I attained here a perfect result which I was unable to reach in any other way, and under similar circumstances I should repeat the procedure. If permanent, this will be one of the most gratifying of my cures.

Dr. H. Augustus Wilson presented and described:

A NEW APPARATUS FOR PREPARING DRY GYPSUM BANDAGES.

Rolling the dry plaster-of-Paris bandages by hand, the method usually in use, is unsatisfactory, and under the most favorable circumstances a dirty process. It was to avoid the inconveniences and irregularities of that method that I devised this apparatus, which I have had made by A. G. Gefvert, orthopædic apparatus manufacturer.

It consists of an ordinary box-bandage roller, with addition of the following: A movable bottom, A, A, A, held in contact with the outermost layer of the bandage as it is rolled, by a rubber band B, and the other end by a hinge-joint C. Upon this movable bottom, and just in front of the crank, is a flood-gate or distributor, not shown in the illustration, which equalizes the distribution of the plaster and presses it into the bandage from above, while the movable bottom prevents the gypsum from passing through the meshes. The proper tension is applied by two rubber bands.



A hopper, E, is provided with an arm, F, bent in such a manner as to be raised by the crank at each half turn, and upon being released, it falls, throwing down a quantity of the powder upon the bandage in front of the distributor. A compartment, H, H, H, occupying the otherwise waste space under the mova-

ble bottom, is utilized as a receptacle in which may be kept the gypsum when the apparatus is not in use.

A scoop accompanies the apparatus in which to take gypsum from the compartment and fill the hopper. The entire affair can be securely held to a table by a clamp, K. Elastic bands are used for springs, because they are inexpensive and can be very readily replaced when worn out.

The method of using is, first to pass the end of the bandage to be rolled over the movable bottom, under the distributor, and attach to the crank. The hopper is now to be placed in position and, by means of the scoop, filled with a sufficient quantity of gypsum. While the crank is turned with the right hand the left guides the bandage, which may be watched, over the hopper, as it is being rolled.

The bent arm of the hopper is so arranged that the fall of the hopper may be sudden or gradual, and upon this depends the quantity of powder discharged. When the crank is turned very slowly the hopper is raised slowly and descends with the motion of the crank, and scarcely any gypsum is precipitated, and, of course, the converse follows. This being clearly understood, a very slight experience will enable any one to control the action of the hopper with the crank.

When a bandage is finished, the crank is withdrawn sufficiently to disengage it from the bent arm of the hopper, and while the left hand holds the bandage a quick reverse turn of the crank enables it to be easily withdrawn. The gypsum remaining on the movable bottom is now discharged into the compartment by placing the hopper to one side, detaching the spring, B, and raising that end.

The apparatus is applicable to the rolling of the ordinary surgical bandage by detaching the rubber spring, B, thus allowing the movable bottom to drop out of the way. It prepares the dry gypsum bandages evenly and quickly. It is very simple in its construction and action. It cannot get out of order, except by the breaking of the rubber bands. It is inexpensive. Possessing these advantages, I hope it will be of service and facilitate the preparation of the dry gypsum bandages in the hands of other physicians as it undoubtedly has in mine.

STATE MEDICINE.

REGULATION OF THE PRACTICE OF MEDICINE IN THE STATE OF MINNESOTA.

[The following is a copy of the law for regulating medical practice, etc., adopted by both branches of the Legislature of the State of Minnesota during the recent session, and signed by the Governor. It is to become operative July 1, 1887.—EDITOR.]

A BILL

To regulate the practice of medicine in the State of Minnesota, and to license physicians and surgeons, and to punish persons violating the provisions of this act.

Be it enacted by the Legislature of the State of Minnesota.

SECTION 1. The governor of the State shall appoint a board of examiners, to be known as the State Board of Medical Examiners, consisting of nine members, who shall hold their office for three years after such appointment and until their successors are appointed;

Provided, That the members thereof first appointed under this act shall be divided into three classes, each class to consist of three. The first class shall hold office under said appointment for the period of one year, the second class for two years, and the third class for three years from the date of their appointment.

It is further provided that no member thereof shall be appointed to serve for more than two terms in succession, and no member of any college or university having a medical department shall be appointed to serve as a member of said board, two of which are homœpathic physicians.

SEC. 2. Said board of medical examiners shall elect a president, secretary and treasurer, shall have and keep a common seal. The president and secretary shall have the power to administer oaths. Said board of medical examiners shall hold meetings for examination, at the capital of this State, on the first Tuesday of January, April, July and October of each year and such other meetings as said board may from time to time appoint. Said board shall keep a record of all the proceedings thereof, and also a record or register of all applicants for a license, together with his or her age, time spent in the study of medicine, and the name and location of all institutions granting to such applicants degrees or certificates of lectures in medicine or surgery. Said register shall also show whether such applicant was rejected or licensed under this act. Said books and register shall be *prima facie* evidence of all of the matters therein recorded.

SEC. 3. All persons hereafter commencing the practice of medicine and surgery, in any of its branches in this State, shall apply to said board for a license so to do, and such applicant at the time and place designated by said board, or at the regular meeting of said board shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the board shall deem advisable; and present evidence of having attended three courses of lectures of at least six months each; said board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery. When desirable said examination shall be conducted in the presence of the dean of any medical school or the president of any medical society of this State. After examination said board shall grant a license to such applicant to practice medicine and surgery in the State of Minnesota, which said license can only be granted by the consent of not less than seven members of said board, and which said license shall be signed by the president and secretary of said board

and attested by the seal thereof. The fee for such examination shall be the sum of $10, and shall be paid by the applicant to the treasurer of said board, to be applied by said board towards defraying expenses thereof—and such board may refuse or revoke a license for unprofessional, dishonorable or immoral conduct.

SEC. 4. The person so receiving said license shall file the same or a certified copy thereof wi h the clerk of the district court in and for the county where he or she resides, and said clerk of the court shall file said certificate or copy thereof, and enter a memoranda thereof, giving the date of said license and name of the person to whom the same is issued, and the date of such filing in a book to be provided and kept for that purpose, and said clerk of the court shall each year furnish to the secretary of said board a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter at the appropriate place in the record so kept by him a memoranda of said fact, so that the records so kept by said clerk of the court shall correspond with the records of said board, as kept by the secretary thereof. In case a person so licensed shall move into another county of this State, he or she shall procure from the clerk of the court a certified copy of said license, and file the same with the clerk of the district court in the county to which he or she shall so remove, said clerk shall file and enter the same with like effect as if the same was the original license.

SEC. 5. This effect shall not apply to commissioned surgeons of the United States Army or Navy, to physicians or surgeons in actual consultation from other States or Territories, or to actual medical students practicing medicine under the direct supervision of a preceptor. Physicians whose practice extends into the teritory of this State from an adjoining State or Territory shall comply with the provisions of this act, and shall record their certificates with the clerk of the county in this State, whose county seat is nearest the residence of such applicant.

SEC. 6. Any person practicing medicine or surgery within this State without first having obtained the license herein provided for or contrary to the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not less than $50 nor more than $100, or by imprisonment in the county jail not less than ten nor more than ninety days, or both fine and imprisonment. Any person shall be regarded as practicing, within the meaning of this act, who shall append the letters "M.D." or "M.B." to his or her name, or prescribe, direct, or for a fee recommend for the use of any person any drug or medicine or other agency for the treatment, care or relief of any wound, fracture or bodily injury, infirmity or disease. Justices of the peace and the respective municipal courts shall have jurisdiction over violations of the provisions of this act. It shall be the duty of the respective county attorneys to prosecute violations of this act.

SEC. 7. Chapter 125 of the General Laws of 1883, is hereby repealed. It is, however, provided that all persons licensed under said act shall be taken and considered as licensed under this act. And the secretary of the board herein provided for shall enter the names of such persons upon the register so kept by him as licensed physicians and surgeons, without application or fee upon the part of the person so licensed.

SEC. 8. This act shall take place and be in force from and after the 1st of July, 1887.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association—The International Congress—Proposed County Association in Brooklyn—Spastic Ataxia; the Scleroses of the Cord—General Shaler.

At the stated monthly meeting of the New York County Medical Association, held February 21, Dr. Charles A. Leale, who has for the past two years filled the position of President with so much credit both to himself and the Association, delivered an able address, on retiring from the chair, which was followed by one of like character by the President-elect, Dr. John Shrady. In his remarks Dr. Leale referred to the fact that from its membership was chosen the one not only to deliver the Address in Medicine at the last meeting of the British Medical Association, but who was also unanimously elected to be the President of the next International Medical Congress. "We miss his genial face to-night," he said, "but the name of Dr. Austin Flint will ever remain upon our records as the representative man." The Association, he went on to say, had now completed its third year, and those who had been constantly connected with it since its birth had great reason to rejoice at the amount of excellent work its members had accomplished, and at its continually increasing power.

In the course of his address Dr. Shrady said: I beg to call your attention to the coming International Medical Congress in the autumn, to which every Fellow, in common with the profession at large, is expected to give his moral support. Happily, the difficulties which beset the preliminary committees, and which were exaggerated with a purpose, have been overcome. Individual and sectional jealousies have been allayed. The unduly ambitious were rebuked by the prompt acceptance of resignations, and the embarrassments which were supposed to forebode defeat—and I regret to say that many were unpatriotic enough to desire it—have only ended in the attainment of harmony of action. Some needed the lesson that there was to be no background for the display of incandescence, and that sometimes even the electric light might cast green and annoying shadows. Our Medical Republic is now at peace, and amply able to receive visitors from abroad, and render their stay agreeable, as well as perhaps profitable.

It is worthy of note that a movement is now on foot to organize a County Association in Brooklyn,

like that in this city, which shall be in affiliation with the State Medical Association and support the National Code of Ethics. A very satisfactory informal meeting of the Fellows of the State Association residing in Brooklyn was held in February to consider the advisability of such a step, when, by a unanimous vote, a committee consisting of Drs. Edward R. Squibb, chairman, Joseph C. Hutchison, Avery Segur, and E. H. Squibb, with power to add to their number, was appointed to draft a plan of organization and call a meeting by circular of all physicians in the city in accord with the principles of the Association.

At the last meeting of the New York Academy of Medicine the paper of the evening was by Dr. C. L. Dana, one of the ablest and most studious of our neurologists, whose subject was *Spastic Ataxia, Functional and Organic, and the Combined Scleroses of the Spinal Cord.* The form of disease to which he referred was that interesting one so admirably described under the name of ataxic paraplegia by Dr. Gowers in a clinical lecture delivered at University College Hospital London, February 23, 1886; and the object of the paper, he said, was to call attention to a class of cases, not very rare, which corresponds to some extent to ordinary progressive locomotor ataxia, and to a much more marked degree to spastic paraplegia. These it was important to recognize both on account of the prognosis and treatment. He had been able to collect forty five cases of combined sclerosis, observed by various authorities, and among them were two which, with their autopsies, were reported for the first time in the present paper. All but sixteen of the number he felt obliged to exclude on account of various circumstances which he thought prevented them from properly coming under the head of the class of cases now under discussion.

In describing the symptoms Dr. Dana said there was gradually increasing weakness of the limbs, with some loss of power of coördination; but the lancinating pains of tabes were for the most part entirely absent, while the patellar tendon reflex was increased, instead of being lost, as in the latter affection. The "Argyle-Robertson" pupil was also seldom seen. As the disease advanced, the muscular power became more and more impaired; while the incoördination did not proportionally increase, but was overshadowed by the increasing paralysis. The increased myotatic irritability continued, and stiffness and rigidity developed as its consequence. "Thus," as Dr. Gowers had graphically described it, "the aspect of the patient comes to be that of spastic paraplegia; the feet drag as the patient walks, shake from clonus when he steps, and the legs are hauled forward with visible effort at each step." Sexual power was often lost early in the disease. The sphincters were frequently impaired, but the impairment rarely reached a considerable degree. There was, as a rule, no wasting of the muscles, and no change in their electrical excitability.

The pathological condition found *post mortem* by Dr. Dana was chronic cervico-dorsal myelitis, affecting the lateral columns primarily, the gray matter secondarily. In a case the drawings from which he exhibited, there were secondary degenerations in the lateral columns, and ascending and descending development of sclerosis in the columns of Gall. In addition, there was sclerosis of the crossed pyramidal tracts, most marked in the dorsal region, and sclerosis in the cerebellar tracts to a moderate extent. The sclerosis in the columns of Gall was most marked in the cervical region. According to Gowers, in all cases the spinal cord has presented sclerosis of both posterior and lateral columns; but the precise extent and degree of the degeneration seem subject to considerable variations. As a general rule, he says, the sclerosis of the posterior columns differs from that of tabes in two particulars: First, it is not more intense, and often is less intense, in the lumbar than in the dorsal region of the cord. Sometimes, indeed, in the middle and lower parts of the lumbar region the posterior columns may be free from sclerosis, although it is considerable in the dorsal region and at the junction of this with the lumbar enlargement. The second difference is that the sclerosis has rarely the special intensity in the root-zone of the postero-external column that characterizes the lesion of tabes.

The prognosis as to life, Dr. Dana remarked, was better than in simple tabes dorsalis. The disease has little tendency to cause death; indeed, according to Gowers, the fatal cases have, for the most part, been untypical, and do not convey an accurate idea of the disease. The chief danger to life was said to be from the accidents common to all chronic spinal affections, and especially from kidney disease secondary to retention. So far as the prospect of recovery was concerned, the prognosis was unfavorable, and one case, Dr. Dana said, was on record in which the affection had already lasted thirty years.

The treatment did not vary greatly from that of locomotor ataxia. Rest was a very important element, and electricity, both static and in the form of the Faradic current, was useful. Orthopædic appliances to support the tottering limbs were often of great service. Antisyphilitic treatment should always be given a thorough trial, and large doses of iodide of potassium were not infrequently called for. In conclusion, Dr. Dana said that while no name had as yet been found which properly described the disease clinically, he thought the designation "combined fascicular sclerosis" was applicable from a pathological point of view.

In the discussion of the paper Dr. M. Allen Starr, who recently delivered the Middleton Goldsmith lectures, under the auspices of the New York Pathological Society, on "Multiple Neuritis," objected to the name proposed by Dr. Dana; claiming that the changes in the cord met with after death were not entirely fascicular. The diagnosis between tabes and combined sclerosis, he remarked, was often very difficult; and, again, the occurrence of general paresis in connection with tabes sometimes made us hesitate in arriving at a diagnosis. Dr. E. C. Seguin related a case of his own in which he said the lesions seemed to show that there were instances in which pathological changes present were intermediate between fascicular sclerosis and disseminated sclerosis. Dr.

Jacobi suggested that perhaps the sclerosis followed the course of minute blood-vessels whose extensive network, it had been shown, served to connect and bind together the various fasciculi of the spinal cord. This anatomical fact, he thought, might offer a satisfactory explanation of these mixed forms of sclerosis. He regarded the subject of the paper as one of great importance to general practitioners, on account of the frequency with which disease of the spinal cord was now met with.

The Governor has at last given his official approval of the order made some nine months ago by Mayor Grace removing General Shaler from the office of President of the City Board of Health. P. B. P.

SAENGER'S CÆSAREAN OPERATION.

Dear Sir:—In his excellent paper entitled "Can the Cæsarean Section be Safely Substituted for Craniotomy in the United States at the Present Time," published in THE JOURNAL of February 12, 1887, and in the scientific conclusions of which I fully concur, my friend, Dr. J. Taber Johnson, in one place mentions me in a way that may give rise to misunderstanding, if not corrected. He says: "To quote from recent authority, in the October number of the *American Journal of Obstetrics*, page 1021, by Garrigues, who claims that the Sänger method should as properly be called by his name as by Sänger's, and further, that there is really nothing in this 'method' after all, as the most successful operators get on better without it—Garrigues says," etc. To those who have not read my paper, or who have forgotten the particulars of it, the first assertion looks as if I had laid claim to the so-called Sänger method, but a reference to the passage alluded to in my paper will clearly show that this is by no means so. I said: "When he (Sänger) says that American physicians might as well call the improved Cæsarean section mine as his, I quite agree with him, but I make haste to add that *one thing would be as ridiculous as the other*. The improved Cæsarean section is a beautiful outgrowth of general surgical and special gynecological development, an evolution due to the combined efforts of many men working independently in different countries."

The second assertion put into my mouth, viz., that there is really nothing in this "method," after all, will be very apt to be misunderstood. The cause of this that the words, "Sänger's method," have a double meaning. I show, in the paper referred to, that the only original idea of Sänger was the resection of the two slices of muscular tissue of the uterus contiguous to the incision made in that organ, but unfortunately, not only German, but English, French and American writers have got into the habit of calling the whole improved Cæsarean section, with its manifold steps due to different men, by Sänger's name. In the above-mentioned quotation from Dr. J. T. Johnson, it must be well understood that in the first sentence he refers to the whole improved Cæsarean section, while in the second he has only in view that part of Sänger's so-called method which really belongs to him, namely, the resection of muscular tissue of the womb, and by no means all the other points entering into the composition of that which is erroneously attributed to Sänger. It is Sänger's original proposition which is objectionable, and has been given up, while all the rest of the improved Cæsarean section is, in my opinion, highly recommendable.

Very truly yours,

H. J. GARRIGUES, M.D.

155 Lexington Ave., New York, March 10, 1887.

"THE ETIOLOGY AND CURE OF ASTHMA."

Dear Sir:—In the issue of THE JOURNAL for Feb. 26 appeared a short review, under the above heading, by Dr. E. F. Ingals, which is likely to mislead those not familiar with the subject. I was astounded at the manner in which Dr. Ingals perverts the meaning of my words. *Firstly*, he claims priority for Dr. Wm. H. Daly against Hack. As the paper of Dr. Daly, quoted by Dr. Ingals, deals exclusively with hay asthma, and as my paper and quotations from Hack entirely exclude the consideration of hay asthma, there can be no discussion as to priority.

If Dr. Ingals is still confused on this point, I should earnestly advise him to read Hack's writings before discussing them.

The second point in Dr. Ingals' review states: "It is claimed that nearly all cases of asthma are the result of disease in the nasal cavities." I very distinctly stated in the introduction to and in the course of my paper, that the only form of asthma which I wished to consider was that perennial form which is more or less independent of the seasons, and not complicated with organic disease, etc., namely,—"*Asthma nervosum seu essentiale*." This is, comparatively speaking, a rarer form of asthma (*vide* Niemeyer's Spec. Path. and Therap., 10th ed.), and therefore the reproach quoted above falls to the ground.

Dr. Ingals' third point is: "It is also claimed that cauterization of the nasal mucous membrane will cure the majority of the cases of asthma." This statement is controverted by my objection to Dr. Ingals' second point. Very truly yours,

EDWIN J. KUH, M.D.

Central Music Hall, Chicago, March 9, 1887.

ASSOCIATION ITEMS.

AMERICAN MEDICAL ASSOCIATION.

The Thirty-eighth Annual Session will be held in Chicago, Ill., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine Hospital Service of the United States.

"Each State, County, and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every

ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Secretaries of Medical Societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send to him, annually, a corrected list of the membership of their respective Societies.

SECTIONS.

"The Chairmen of the several Sections shall prepare and read, in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of science included in their respective Sections. . . " *By-Laws*, Art. II, Sec. 4.

Practice of Medicine, Materia Medica and Physiology.—Dr. J. S. Lynch, Baltimore, Md., Chairman; Dr. J. B. Marvin, Louisville, Ky., Secretary.

Obstetrics and Diseases of Women and Children.—Dr. F. M. Johnson, Kansas City, Mo., Chairman; Dr. W. W. Jaggard, Chicago, Ill., Secretary.

Surgery and Anatomy.—Dr. H. H. Mudd, St. Louis, Mo., Chairman; Dr. A. M. Pollock, Pittsburg, Pa., Secretary.

State Medicine.—Dr. George H. Rohé, Baltimore, Md., Chairman; Dr. Walter Wyman, U. S. M. Hospital, New York, Secretary.

Ophthalmology, Otology and Laryngology.—Dr. X. C. Scott, Cleveland, O., Chairman; Dr. J. H. Thompson, Kansas City, Mo., Secretary.

Diseases of Children.—Dr. DeLaskie Miller, Chicago, Ill., Chairman; Dr. W. B. Lawrence, Batesville, Ark., Secretary.

Oral and Dental Surgery.—Dr. John S. Marshall, Chicago, Ill., Chairman; Dr. A. E. Baldwin, Chicago, Ill., Secretary.

Medical Jurisprudence.—Dr. I. N. Quimby, Jersey City, N. J., Chairman; Dr. H. H. Kimball, Minneapolis, Minn., Secretary.

A member desiring to read a paper before a Section should forward the paper, or its *title* and *length* (not exceeding twenty minutes in reading), to the Chairman of the Committee of Arrangements at least one month before the meeting.—*By-Laws.*

Committee of Arrangements.—Dr. Charles Gilman Smith, Chicago, Ill., Chairman.

Amendment to By-Laws.—Create a new Section, to be known as the Section on Dermatology and Venereal Diseases.

WM. B. ATKINSON, M.D.,
Permanent Secretary.

Philadelphia, 1400 Pine St., S. W. cor. Broad.

CHICAGO COLLEGE OF PHARMACY.—At the recent annual meeting of the College, George Buck was elected President; Judson S. Jacobus, Treasurer; and D. H. Galloway, Secretary.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

IN reference to demands from various quarters for information as to hotel rates here in Washington, and what arrangements have been made for a reduction of the same, by our committee, in favor of those who will attend the International Medical Congress, I beg to announce the following scale of prices:

The Arlington Hotel, from	$3 to $3.50 per day.
Riggs House, from - -	$3 to $3.50 per day.
Willard's Hotel, from -	$3 to $3.50 per day.
Metropolitan Hotel, - - - -	$3.00 per day.
National Hotel, - - - - -	$3.00 per day.

Other hotels, conducted on European style, will furnish rooms at from $1 to $2 a day. First-class lodging houses will also furnish rooms from $1 to $1.50 a day.

A. Y. P. GARNETT, M.D.,
Ch'n Com. of Arr. Int. Med. Congress.
1319 New York Ave., Washington, D. C., March 14, 1887.

SINCE the statement concerning reduced rates on the transatlantic steamers, given in this journal for Feb. 26, page 241, we have been officially informed by the Committee of Arrangements that, in addition to the steamship lines then given, the North German Lloyd Line has agreed to give physicians and members of their families the round trip from Bremen to New York and return at $187.50, and the Cunard Line agrees to deduct ten per cent. from usual rates for members of the Congress only.

We are further authorized to state that Albaugh's and the National Theatre and Willard's Hall, in Washington, have been secured for the use of the Congress. The last named will be headquarters and the place of registration.

Congress, before its recent adjournment, appropriated $10,000 from the National Treasury to aid in defraying the necessary expenses of the Medical Congress.—EDITOR.

MISCELLANEOUS.

WESTERN RESERVE UNIVERSITY.—A very elegant and complete new building for the Medical Department of Western Reserve University in Cleveland, Ohio, had been completed and was formally dedicated on the evening of March 8, 1887. The entire cost. about $175.000, was the donation of Mr. John L. Woods, a wealthy and liberal citizen of that city.

NOTES AND ANSWERS.

ARMY SURGEONS ON SICK LEAVE.

Sir:—An answer to the following question will be highly appreciated: Can an Assistant Surgeon U. S. A. on sick leave practice medicine in the town where his home is, hold a State position, and keep a drug store, all at the same time?

INQUIRER.

Key West, Fla., March 7, 1887.

We are not familiar with the Army regulations concerning the rights and duties of Assistant Surgeons on *sick leave*. Will some reader give "Inquirer" a correct answer?—EDITOR.